



UNIVERSITY
OF TASMANIA

Does providing short cycle feedback produce organisational learning?

By

Paul Miles

Australian Institute of Health Service Management

Submitted in partial fulfilment of the requirements for the
Doctor of Business Administration (Health Service Management)
University of Tasmania
July, 2014

University of Tasmania

Declaration of Originality

This thesis contains no material which has been accepted for a degree or diploma by the University or any other institution, except by way of background information and duly acknowledged in the thesis, and to the best of the my knowledge and belief no material previously published or written by another person except where due acknowledgement is made in the text of the thesis, nor does the thesis contain any material that infringes copyright.

Authority of Access

This thesis may be made available for loan and limited copying and communication in accordance with the Copyright Act 1968.

Statement of Ethical Conduct

The research associated with this thesis abides by the international and Australian codes on human and animal experimentation, the guidelines by the Australian Government's Office of the Gene Technology Regulator and the rulings of the Safety, Ethics and Institutional Bio-safety Committees of the University.

Statement regarding published work contained in thesis

At the time of submission, no part of this thesis has been published in any form.

Paul Miles

16 July 2014

Date

Dedication

For Dad and Pop.

Acknowledgements

I would like to acknowledge the support of my primary supervisor Associate Professor Jeff Patrick, who provided me with encouragement and perseverance, despite how monumental the task seemed. I would also like to thank my secondary supervisor Dr Megan Woods for her friendliness, enthusiasm and amazing attention to detail. The support from my “coaches” cannot be measured by the countless emails and teleconferences invested into this thesis, or the time they spent on me to ensure I was on the right path – for this I am truly grateful.

I would like to extend my appreciation to Chris Leahy, General Manager of Bankstown Hospital (and formerly Fairfield Hospital) for supporting this research study. I would like to thank Mike Wallace, former Chief Executive of Sydney South West Area Health Service for giving me the opportunity to undertake this thesis and his incomparable guidance. Also, I wish to express my heartfelt gratitude to Jan Whalan, former Director of Corporate Services of Sydney South West Area Health Service – I would not be the Health Manager I am today if it were not for her mentorship.

Personally, I would like to thank my family for their support, patience and motivation. And most of all, I would like to thank my partner Christine, who has been with me since Day 1 of this thesis. Words are not enough to describe the love and support she has provided me throughout this journey and this achievement is as much hers as it is mine.

Contents

Declaration of Originality.....	ii
Authority of Access	ii
Statement of Ethical Conduct	ii
Statement regarding published work contained in thesis.....	ii
Dedication	iii
Acknowledgements.....	iv
Contents.....	v
List of Tables	x
List of Figures	xii
ABSTRACT.....	xiii
CHAPTER I: INTRODUCTION	1
Single Loop and Double Loop Learning Theories.....	5
Aim of the Study	9
Structure of the Dissertation	11
CHAPTER II: LITERATURE REVIEW	13
Incident Reporting in Healthcare.....	13
Definitional Issues in Reporting	14
Incident Reporting Systems in Australian Healthcare	17
Inter-Jurisdictional Comparison of Adverse Events	21
Importance of Reporting.....	21
Management of Incident Reports.....	23
The Value of Incident Reporting	26

Incident Reporting and Feedback	26
Incident Reporting and Patient Safety.....	27
Near Miss Reporting	28
Lessons from Other Industries.....	28
Common Problems of Incident Reporting	31
Lack of Transparency	31
Fear of Litigation	32
Accountability and Causes of Incidents	35
The Underreporting Phenomenon.....	38
Critique of Current Literature	38
Lag in Reporting and Feedback.....	40
Perceived Lack of Utilisation (and Clinician Engagement).....	41
Formative Feedback vs. Punitive Feedback	44
Justification of Study.....	46
Research Opportunities Explored	48
Measuring Underreporting	48
Effective Feedback Mechanisms.....	49
Organisational Learning Derived from Short Cycle Feedback	51
CHAPTER III: METHOD.....	57
Study Aims and Research Questions	57
Research Design.....	58
Participants	65
Recruitment Criteria	65
Recruitment Method	66
Context and Characteristics	70
Baseline Incident Reporting Data	74
Collection	74
Rationale	76

Phase 1: Pre-Intervention Questionnaire	76
Description	77
Distribution	81
Collection	82
Response Rate.....	82
Phase 2 – 4: Verbal Query of Observed Incidents	83
Implementation	84
Clinical Support Officers and In-Charge Nurses	85
Phase 3: Short Cycle Feedback Intervention (in Study Ward)	88
Implementation	90
Feedback Specialist	91
Phase 5: Post-Intervention Questionnaire	92
Description	92
Distribution	93
Collection	93
Response Rate.....	94
Analysis of Questionnaires.....	95
Comparison of Pre- and Post- Intervention Questionnaires from Study Ward.....	95
Comparison of Pre- and Post- Intervention Questionnaires from Control ward.....	96
Comparison of Pre- and Post- Intervention Questionnaires between Study and Control Wards.....	96
CHAPTER IV: RESULTS	99
Impact of Short Cycle Feedback on Organisational Learning	111
Impact of Short Cycle Feedback on Staff Satisfaction	119
Improvement in Reporting Rates.....	120
Decrease in Actual Incidents.....	122
Decrease in the Severity of Incidents	124
CHAPTER V: SUMMARY OF FINDINGS & PRELIMINARY CONCLUSIONS	129

Introduction and Rationale for Study 2	129
Organisational Factors that Affected the Short Cycle Feedback Model	131
Equivocal Results from Study 1.....	137
Findings from Study 1 and Organisational Learning.....	139
Preliminary Conclusions from Study 1.....	143
CHAPTER VI: SECOND PHASE OF RESEARCH – FOCUS GROUP	146
Participants and Design.....	146
Analysis of Focus Group Data	148
Revised Recommendations.....	151
CHAPTER VII: DISCUSSION & IMPLICATIONS	166
Summary of the Findings	166
Contribution to Theory	168
Comparisons with Organisational Learning Theories	168
Comparisons with Incident Reporting Systems	173
Limitations of the Study and Opportunities for Future Research	176
Practical Implications for Hospitals / Health Services	186
Medical.....	186
Clinical	188
Managerial	189
Regulatory	193
Conclusion.....	195
REFERENCES	197
APPENDICES	216
Appendix 1: HREC Approval – South Western Sydney Local Health District.....	217
Appendix 2: HREC Approval – University of Tasmania	219
Appendix 3: Fairfield Hospital Organisational Chart	221

Appendix 4: Participant Information Sheet	222
Appendix 5: Participant Consent Form	224
Appendix 6: Pre-Intervention Questionnaire	226
Appendix 7: Email re: Introduction of Feedback Specialist to Control Ward	235
Appendix 8: Follow-up Email re: Pre-Intervention Questionnaire	236
Appendix 9: Post-Intervention Questionnaire.....	237
Appendix 10: Verbal Query Instructions.....	240
Appendix 11: Verbal Query Form	241
Appendix 12: Short Cycle Feedback Form	242
Appendix 13: Invitation to Participate in Focus Group.....	243
Appendix 14: Focus Group Briefing Note	244
Appendix 15: Focus Group Participant Consent Forms	245

List of Tables

Table 1: Key Definitions	16
Table 2: Number of Study Participants, by Profession	70
Table 3: Proportion of Staff at Fairfield Hospital for the 2011-12 Financial Year	71
Table 4: Summary of general patient demographics and staffing compositions for the Study and Control wards, compared to the entire Hospital, for the period 2011-12	72
Table 5: Top ten (10) DRGs for the General Medical (Study) ward, for the period July 2011 – February 2012	73
Table 6: Top ten (10) DRGs for the General Surgical (Control) ward, for the period July 2011 – February 2012	74
Table 7: Pre-intervention Questionnaire Response Rate, by Profession	83
Table 8: Post-intervention Questionnaire Response Rate, by Profession.....	95
Table 9: Comparison of Response Rate, by Profession, between the Pre-Intervention and Post-Intervention Questionnaires	98
Table 10: Summary of staff representativeness that responded to the questionnaires	99
Table 11: Summary of staff representativeness that responded to the questionnaires, compared to the whole of Hospital	100
Table 12: Summary of the number of nodes and themes used in the original and revised inter-rater reliability tests.....	104
Table 13: Summary of results for the original and revised inter-rater reliability tests.....	104
Table 14: Frequency of themes selected for the nodes in Question 69 (Please describe a memorable incident you have been involved in?)	105
Table 15: Frequency of themes selected for the nodes in Question 70 (Please summarise what you learned from this incident?)	105

Table 16: Frequency of themes selected for the nodes in Question 71 (In your opinion, what do you think the organisation learned from this incident?).....	106
Table 17: Summary of average results for pre-intervention questionnaire and post-intervention questionnaire, for common questions	108
Table 18: Summary of responses in relation to the question “I was satisfied with the availability of the feedback specialist”	109
Table 19: Summary of responses in relation to the question “Please rate your overall experience with learning from feedback provided by the feedback specialist”	109
Table 20: Summary of responses in relation to the section regarding ‘incident learning’ from the pre-intervention questionnaire	111
Table 21: Number of identified incidents and anonymous incidents, per Ward	117
Table 22: Types of incidents in which feedback was provided by the feedback specialist....	117
Table 23: Comparison of results from the pre-intervention questionnaire and the post-intervention questionnaire in relation to questions regarding feedback from incidents.....	119
Table 24: Summary of number of incidents observed vs. number of incidents reported, including results of the verbal query process.....	123
Table 25: Summary of Severity Assessment Code (SAC) ratings for reported incidents during the extended study period (May – July)	126
Table 26: Summary of Severity Assessment Code (SAC) ratings for reported incidents during the study period (April – June)	127
Table 27: Summary of Initial and Actual Severity Assessment Code (SAC) ratings for reported incidents during the extended study period (March – July).....	128
Table 28: Summary of thematic analysis performed in relation to the focus group discussion	150
Table 29: Summary of organisational learning definitions, in relation to the research study	173

List of Figures

Figure 1: Visual Summary of the Research Design	64
Figure 2: Illustrative Example of Nodes and Themes	102
Figure 3: Number of incidents reported by study ward and control ward between November 2011 and July 2012	122

ABSTRACT

Organisational learning is essential for innovation and effectiveness (Franco & Almeida 2011); especially in healthcare where organisational learning can directly improve the quality of care provided to patients. Incident reporting is a common governance tool within healthcare (Mahajan 2010) and feedback from incident reporting has the potential to facilitate individual and organisational learning that could lead to enhanced practices (Levitt & March 1988). Furthermore, the identification and resolution of problems encountered in the course of one's work is a method for achieving organisational learning (Tucker & Edmondson 2003); in practical terms, incorporating lessons learnt into the organisation's 'memory' by way of governance processes, policies and systems. However, little research has explicitly examined the potential for incident reporting to foster organisational learning or the mechanisms through which this might occur.

The purpose of this study was to examine whether providing short cycle feedback through an incident reporting system produced organisational learning. Specifically, the study investigated whether the short cycle feedback system would facilitate single-loop organisational learning, which is defined as learning to identify errors and develop ameliorating strategies to prevent their recurrence (Argyris & Schon 1978). Single loop learning was measured as i) an improvement in incident reporting rates; ii) a decrease in actual incidents; and, iii) a decrease in the severity of incidents.

This research was conducted over 2 Stages. Stage 1 involved a longitudinal study conducted over 5 phases and undertaken in 2 wards (study and control) within a major metropolitan hospital in south-west Sydney. During Phase 1, a pre-intervention questionnaire was administered to staff in the control ward and study ward to evaluate staff members' attitudes towards incident reporting and feedback. In Phase 2, verbal querying was used to collect data on observed and reported incidents in order to quantify incident underreporting. During Phase 3, staff in the study ward received a short cycle feedback intervention that aimed to produce and provide feedback from an incident report to the reporting staff member within a 72 hour timeframe. A senior nurse provided feedback in a formative, consultative manner, which was delivered face-to-face to the incident reporter. During Phase 4, the short cycle feedback intervention was withdrawn and underreporting continued to be measured via verbal querying. During Phase 5, a post-intervention questionnaire was administered to staff in the control ward and study ward to evaluate staff members' attitudes towards incident reporting and feedback.

The feedback intervention and comparisons between pre-intervention and post-intervention questionnaires demonstrated an improvement in staff members' perception regarding the utility of incident reporting systems and that short cycle feedback facilitated learning outcomes. Expected results, such as a reduction in incident severity and actual incidents, were equivocal. Consequently, during Stage 2 of the study a focus group was conducted with members of the hospital's senior management team to critique the results and develop strategies to promote feedback mechanisms within the organisation. Focus group participants commented on the virtues of the study and recommended strategies to enhance medical staff participation and

expand the feedback specialist role to improve engagement of after-hours and weekend staff. The focus group determined that these strategies, in conjunction with a replication study at a larger Hospital and across multiple specialties, would strengthen the findings from Stage 1.

The study concluded that short cycle feedback did facilitate single loop learning, evidenced by changes in staff attitudes, knowledge and behaviour regarding incident reporting and clinical practices. The study also found that short cycle feedback produced 3 additional forms of learning: double-loop organisational learning, triple-loop organisational learning, and vicarious learning. Double loop learning was evidenced by new values regarding incident reporting utility. Triple loop learning was observed by a further understanding of incident reporting as a tool within a learning continuum system. Vicarious learning was demonstrated via a change in skills and behaviours of participants that did not directly receive short cycle feedback but learnt vicariously about its value. Hence, the research demonstrated that short cycle feedback has greater potential for facilitating organisational learning than previously theorised.

CHAPTER I: INTRODUCTION

Incident reporting systems are commonly established within organisations to capture events that deviate from the expected course of action or outcome. In the NSW public health system, this is evidenced by the Incident Information Management System (IIMS), where incidents documented within IIMS capture events that feature sub-standard clinical practices, which at times can adversely affect the patient's treatment and outcome. Thus, the management of incidents replicates an organisational inquiry (Argyris & Schon 1978), such as a Case Conference or Morbidity and Mortality review, to identify the cause of the problem and formulate corrective actions. Whilst the value of incident reporting is to derive lessons that could lead to improved practices and prevention of recurrent incidents, this ideology is not often reinforced by pragmatic operational practices (Lawton & Parker 2002). Incident reports can be used to rectify human error and lead to improvements in clinical practice (Croskerry 2000). As such, strategies to improve performance must be based upon non-punitive principles and formative feedback (Lake & Landau 2007) as a fear of professional and legal ramifications is a barrier to incident reporting (Davis et al. 2003). Disclosure to the incident reporter of how an incident is managed is often lacking, which promotes the perception that incident reporting lacks usefulness. This can lead to incidents being left unreported, which can compromise the organisation's ability to learn from these incidents. There is often no feedback mechanism to the author of an incident report, which compounds the perception that incident reporting is meaningless and has no utility (Braithwaite et al. 2010).

The implementation of a feedback loop between the incident reporter and incident resolution can facilitate a learning outcome, which can support improvements in clinical practice.

Additionally, the success of such a mechanism could overcome perceptions regarding lack of utility with incident reporting systems. Hence, the observation of learning outcomes, being the product of incident reporting feedback loops, could encourage incident reporting and could foster more positive attitudes about the value of doing so. Any presence of underreporting may decrease as feedback loops become implemented across an organisation. Members of an organisation may change the accepted norms and values they bestow upon incident reporting. Enhanced incident reporting efforts could result from potential incident reporters' understanding that the effectiveness of feedback provided is influenced by the level of input into incident reports. Essentially, this enables the incident reporter to enhance their own understanding of an incident and even contribute strategies to prevent recurrence of the incident. This contribution, rather than dictation, of preventative strategies would enhance the overall educational potential of incident reporting systems (Anderson et al. 2013).

Achieving such learning outcomes requires several changes to existing incident reporting practices. Learning is contingent on the incident reporting feedback loop to be embedded across the whole of the organisation (Warring et al. 2013). Learning and development opportunities can be extracted from incident reports, based on the aggregation of the experiences of practitioners in the field (Barach & Small 2000; Runciman 2002). Incident reporting systems can provide clinical staff with valuable information that leads to patient safety improvements. Therefore, it is imperative for a universal feedback loop to be devised

and implemented, in order to promote compliance with an established feedback mechanism and facilitate knowledge sharing. If members of an organisation are transferred to different units within the organisation, the feedback loop practices should remain the same, to prevent derivation of lessons from incident reporting being compromised. Considering that incident reporting systems within the healthcare industry, such as IIMS, are already embedded within an organisation, the onus shifts to the implementation of a complementary feedback mechanism. At present, the absence of feedback to an incident reporter impedes the individual's and organisation's capacity to learn from such incidents. The potential for learning becomes limited; thus, stifles clinical practice improvement in patient safety and outcomes.

There is limited evidence regarding effective forms of feedback in healthcare (Benn et al. 2009). The timeliness of feedback is believed to be a contributing factor on whether the educational aspects of incident reporting systems are effective to the target audience. For example, short cycle feedback, or feedback provided within a short timeframe to the reporting staff member upon submission of an incident report, has been effectively employed in the acquisition of surgical skills by trainee surgeons (Porte et al. 2007). Timely provision of formative feedback is argued to foster a learning environment that will lead to performance improvements and enhanced patient safety systems. Delays in feedback can inhibit incident-based lessons reaching frontline staff, which limits the opportunity for improvements in patient safety (Mahajan 2010). The ability for local decision makers to address patient safety issues is impeded by a lag in feedback (Farley et al. 2008). A study by Tighe et al. (2006) indicates that the purposes of learning from incidents reported were compromised due to at least 1 month

lag time between reporting and resolution of the incident. A study by Evans et al. (2006) indicated that a lack of feedback was a significant deterrent to incident reporting amongst clinicians. Delayed feedback discourages incident reporting, resulting in a culture of underreporting, particularly by the medical profession (Mahajan 2010; Braithwaite et al. 2010). Active involvement of clinical staff in the incident reporting process will enhance the utility of improvements derived from incident reporting systems. The utility of incident reporting systems on clinical practice is enhanced when feedback is delivered at the time of decision making (Jamtvedt et al. 2006).

It is common within a Hospital or Healthcare setting that lessons are commonly derived from negative experiences. This can be attributed to exhausted resources, increasing public expectations and broad media attention that such negative experiences can generate. Furthermore, these experiences often result in full-scale, acute inquiries, with the intention of leading to improved processes. An example of this is the Special Commission of Inquiry into New South Wales Acute Public Hospitals, led by Commissioner Peter Garling in 2008. The origin of this inquiry was in relation to the death of 16-year old Vanessa Anderson – a death considered avoidable, had it not been for the lack of robust systems that monitor the status of a deteriorating patient. Whilst such an outcome is not commonplace for the NSW Health system, it is acknowledged that an overwhelming majority of incidents entered into the NSW Health incident management system (e.g. IIMS) can be interpreted as having a negative patient event or unexpected consequence that deviated from the expected treatment of the patient. The severity of negative patient events fluctuates significantly, which then triggers varied

processes in response to the nature of the event. For example, an incident assessed at the highest possible severity will automatically initiate a formal investigative process. It is suggested that reported incidents on the lower spectrum of severity, are not routinely transformed into a learning outcome (Mahajan 2010). Thus, it can be argued that the learning component of incident reporting systems is not fully utilised regardless of the incident's severity, which limits the organisation's capacity to learn from incidents and impedes the ability to prevent recurrences. Arguably, latent factors within incidents of low severity should be addressed before they manifest into a high severity incident with catastrophic patient outcomes (Mattioli et al. 2012).

Single Loop and Double Loop Learning Theories

Improving incident reporting has the potential to substantially enhance organisational learning. Organisational learning is defined by the learning processes of individuals within an organisation and disseminating such lessons throughout the organisation, in order to achieve its objectives (Argyris & Schon 1978). Individual-level learning is a necessary prerequisite to organisational learning (Crossan, Lane & White 1999). Such learning can be derived from positive or negative experiences; however, the organisation's ability to learn is measured by extracting lessons from these experiences and transforming them into the values and strategies that guide an organisation (Wang & Ahmed 2003). Additionally, organisational learning contributes to the adaptability of the organisation respective of external factors and environment; often achieved through internal inquiry and evaluation (Kim 1993).

Organisational learning is viewed as encoding lessons learnt from experiences into routines and systems that guide behaviours and cultures of an organisation (Levitt & March 1988).

Organisational learning is supported by the learning process of individuals and dependent on knowledge sharing of such lessons throughout the organisation (Michailova & Sidorova 2011).

In the context of healthcare organisations, organisational learning is an essential component in facilitating a patient safety culture (Anderson et al. 2013). In order to achieve an organisational learning culture, the organisation's members such as clinicians, nurses, allied health professionals and administrators, must share their experiential knowledge on threats to patient safety so that active and latent factors can be identified and organisational-wide strategies and improvements can be realised (Warring et al. 2013). Wang and Ahmed (2003) describe 4 components of the organisational learning process: knowledge acquisition, information distribution, information interpretation and organisational memory. The latter emphasises that the collective of individual learning experiences must be both shared across the organisation and incorporated into the operational practices of the organisation. Such a conversion and integration of individual learning to organisational learning can protect the organisation from knowledge loss due to key individuals leaving the organisation (Kim 1993). The process in which individual learning is achieved is facilitated via frequent, transparent feedback (Baker et al. 2013). Lessons that emerge from feedback-loops are supported by single-loop and double-loop learning theories (Argyris & Schon 1978).

Single-loop learning is the incremental improvement based upon the identification of an error and implementation of ameliorating strategies (Argyris & Schon 1978). Double loop learning

requires the organisation to reassess whether the norms and values of organisational systems are supportive of achieving the organisation's objectives, which can potentially produce radically different solutions (Kim 1993). It is argued that the introduction of politically charged performance indicators imposed upon the Australian health system forces health organisations to utilise double loop learning, in order to enhance their performance to meet these new benchmarks. A recent example being the introduction of the National Emergency Access Target (NEAT) from the Council of Australian Government (COAG) agreements, which will see incremental performance indicators for all public Emergency Department to either admit or discharge patients within 4 hours; culminating in the 90% target on 1 January 2015. Therefore, in-scope health organisations must reassess their models of care in order to align their performance with NEAT. Changes to performance targets exemplify how external drivers can impact upon organisational learning.

In contrast to the previously mentioned external drivers for single-loop and double-loop learning within the healthcare industry, it is the internal drivers that have the most significance and applicability in relation to this research study. Individual-level learning is essential for healthcare practitioners to improve upon their own clinical practices, which ideally translates into improved patient care and outcomes. Such incremental improvements in practice are fundamental to maintain a robust knowledge base and cultivate a continuous learning environment (Wang & Ahmed 2003). In order to facilitate this, the individual must call upon every resource available to them, with the objective being to achieve improved knowledge and skills as a result of single-loop learning (Levitt & March 1988). As such, the organisational

environment must establish learning and development as a strategic goal; both for the benefit of the individuals that form part of the organisational collective and for patient care.

Additionally, in an industry that is challenged by an aging workforce, an organisation that values learning could strengthen their position as a preferred employer. Ultimately, the expected outcome of such a rich learning environment is improved patient care. Hence, in order to sustain the organisation as a reputable healthcare provider, it is in the organisation's interest to ensure staff are continually improving upon their clinical skills and competencies. From an ethical perspective, it can even be argued that it is the organisation's obligation to provide a robust educational environment for healthcare providers, for the purposes of safe patient care.

Incidents captured by IIMS are considered predominantly first-order errors, that being errors identified which deviate from the expected or desired outcome (Fiol & Lyles 1985). Such errors are mismatched to the expected outcome, which within a hospital setting can take the form of incorrect medication or a patient fall. The short cycle feedback system of this research study primarily adopts a single-loop learning approach to addressing first-order errors. The presumption being that incidents within the scope of the short cycle feedback system have a first-order error, which when reviewed by the feedback specialist and in collaboration with the incident reporter, a learning outcome will be identified. This learning outcome would capture any action that deviated from the expected parameters of what is acceptable by the organisation. Alternatively, the short cycle feedback system may trigger a double-loop learning approach to a problem, if the course of action that led to the problem was consistent with defined practices and expectations of the organisation. In both circumstances, the individual

(presumably the same person that documented the incident) is able to benefit from the transformation of an incident into a learning outcome. As defined by Argyris and Schon (1978), organisational learning is only achieved once these lessons are shared throughout the organisation, which ultimately affects the decisions made and actions taken by the organisation as a collective. It is well established within the literature that organisational learning is not the sum of learning by individuals that compose the organisation (Kim 1993; Crossan, Lane & White 1999), but rather embedding such practices into the processes and systems that govern an organisation (Argyris & Schon 1978).

Whilst it is expected that the short cycle feedback system can produce organisational learning, this study emphasises the necessity for providing personalised feedback to the individual. Argyris and Schon (1978) state that organisational learning is dependent on the distribution of lessons learnt across the organisation. The potential for the short cycle feedback system, specifically the sum of all individual feedback experiences, to be embedded on an organisation-wide basis satisfies the aforementioned definition. Additionally, it is suggested that the provision of feedback supports a learning environment for the individuals that form part of the organisation collective (Baker et al. 2013); whereas the absence of feedback is an impediment to fostering such an environment.

Aim of the Study

Feedback on routine clinical work can identify a broad range of errors, which can be used to improve patient safety (Ursprung et al. 2005). Timely feedback to clinicians can enhance their

learning and development (Jolley et al. 2007), and individual performance. A lack of clinician engagement is a barrier of incident reporting (Mahajan 2010), which has led to underreporting of incidents (Tamuz, Thomas & Franchois 2004). Other barriers such as lack of time (Mahajan 2010), perceived lack of utility (Regenbogen et al. 2009), and definitional ambiguity (Stanhope et al. 1999) impede the utilisation of incident reporting systems. The provision of timely feedback demonstrates the utility of incident reporting systems, which may overcome the clinician engagement barrier in relation to incident reporting (Croskerry 2000).

This study aims to determine whether a short cycle feedback system, used within a hospital setting, can produce organisational learning. Additionally, the study aims to explore individual behaviours, as non-compliance or lack of awareness, may be attributed to system failures; hence, an overlap between individual and system issues exists. Vincent (2004) describes the 'window on the system', using an incident as a 'window' to undertake a systems analysis, which may eventually lead to incident prevention. Contributory events that lead to an incident may be prevented by utilising the learning potential of incident reporting systems. The focus of this study is the provision of timely feedback to clinical staff. The research questions of this study are:

- Can a short cycle feedback incident reporting system
 - i) improve reporting rates;
 - ii) decrease actual incidents; and,
 - iii) decrease the severity of incidents?

Specifically, the sub-objectives of the study explore whether frequency and severity of incidents decrease as a result of lessons learnt from the short cycle feedback system. From the comparison of pre-intervention and post-intervention questionnaires, it is expected that the short cycle feedback system will encourage incident reporting by remediating the common barrier of perceived lack of utility.

It is anticipated that this study would benefit Clinical Governance units within public health organisations and the NSW Clinical Excellence Commission (CEC), the NSW Health entity responsible for the overall management of IIMS, by demonstrating how timely feedback can address barriers to incident reporting. Greater utilisation of incident reporting will result in improved accuracy of incident reporting data, which has implications on the development of respective patient safety initiatives. Ultimately, an emphasis on the provision of timely feedback to clinical staff can promote an environment of patient safety.

Structure of the Dissertation

This dissertation is structured across 7 chapters, which will detail the research scope, method, findings, focus group, recommendations and conclusions. Chapter 1 has outlined the area of research and the organisational learning theories that underpin the practical research study. Chapter 2 explores incident reporting systems literature and highlights the research opportunities that will be investigated in the research study. Furthermore, this Chapter describes the phenomenon of underreported incidents and how organisational learning can be derived from short cycle feedback, via the establishment of a learning continuum system (Baker

et al. 2013). Chapter 3 details the research method processes and individual phases that collectively form the longitudinal framework that defines the research study.

Chapter 4 reports the results from the research study, respective of the research questions defined in previous chapters. Additionally, the results of the short cycle feedback intervention are described from organisational learning and staff satisfaction perspectives. Chapter 5 details how results from the research study led to the formulation of a focus group, in order to refine preliminary conclusions made.

Chapter 6 chronicles the focus group design, participants and data. Revised recommendations from the research study are made based upon the discussion from the focus group session.

Chapter 7 summarises the findings of the research study and makes comparisons with existing research. The practical implications for hospitals and health services are featured and opportunities for future research are explored.

CHAPTER II: LITERATURE REVIEW

A comprehensive literature review was undertaken to identify scholarly literature that explored incident reporting systems, which were utilised as a learning tool. Electronic databases used during the literature review included PubMed, ProQuest, Ovid, Ingenta, SAGE Journals, ScienceDirect, Wiley Online Library, EBSCO and PsycINFO. Key words searched, exclusively and in combination, included: “incident reporting”, “incident reporting systems”, “feedback”, “feedback loop”, “personalised feedback”, “individual factors”, “organisational learning”, “single loop learning” and “double loop learning” and “patient safety”. These key words reflected the focus of the study on individual learning behaviours from incident reporting and whether the presence of feedback has a learning effect. Relevant journal articles referenced throughout the literature review and study acknowledge the contribution of system approaches to incident reporting. Such system-based arguments have not been rejected during the course of the literature review; simply, individualised behaviours regarding incident reporting, and any subsequent learning from incident reporting systems, bore greater relevance to the doctoral thesis. It is noted that emphasis was placed on articles that were published within the past 10 years to ensure the most current literature in the field of study was recognised and considered.

Incident Reporting in Healthcare

Incident reporting systems are used as a tool to promote patient safety in the Australian healthcare industry. The Australian Incident Monitoring System (AIMS), more commonly known as the Incident Information Management System (IIMS), is the national incident reporting

system used by the Australian healthcare system. Generally, the underlying principles of incident reporting systems are for accountability, transparency, and to drive improvement (Australian Commission on Safety and Quality in Health Care 2009). The latter principle can be expanded to include knowledge sharing and professional development via learning opportunities and experiences; regardless whether patient harm is a feature of the incident. Incidents are documented in reporting systems, which equip clinical staff to prevent recurrence and improve clinical practices (Frey et al. 2009).

Definitional Issues in Reporting

According to NSW Health (2007) a clinical incident is any unplanned event which results in, or has the potential to result in harm to a patient. This definition suggests that either actual or potential harm must have occurred or have been established from an event. Furthermore, Section 20L of the *Health Administration Act 1982* states that a reportable incident must have had serious or major clinical consequences and the probability of recurrence. The subjectiveness of defining an incident could have implications for what is in-scope in relation to an organisation's incident reporting system, particularly in the interpretation of a clinical consequence. Incidents can have several unfavourable outcomes such as operational, economical and legal. Kessels-Habraken et al. (2010) argued that an incident does not require patient harm to justify the submission of an incident report, which supports the submission of an incident report that did not result in patient harm. Incidents that do not result in patient harm are defined as a near miss (NSW Health 2007). A near miss incident occurs more frequently than an incident that results in patient harm; also known as an adverse event

(Mahajan 2010). Wu, Pronovost and Morlock (2002) suggest that causation is similar for both adverse events and near misses, yet it is only the presence or absence of recovery mechanisms that determine the presence and severity of an actual outcome.

It is imperative to clarify definitions used in incident reports as ambiguity could lead to underreporting. In an American study (Kaldjian et al. 2008) only 40% of doctors knew what kind of errors should be reported. This is consistent with barriers identified by Australian counterparts (Spigelman & Swan 2005). For the purposes of this study an error is defined as “all those occasions in which a planned sequence of mental or physical activities fails to achieve its intended outcome” (Reason 1990). Additionally, the term ‘medical error’ should be considered in by the same definition as described by Reason (1990). Whilst the literature has stated that it is culturally accepted that errors are inevitable in healthcare (Fischer et al. 2006) it is believed that the reporting of incidents can be utilised for training purposes that can reduce error rates (Franklin et al. 2007); although the effectiveness of this training is contingent upon the feedback provided to frontline staff, including the reporting staff member. A study by Leape (1994) suggests that at least 50% of errors that occur in healthcare are unreported. The Institute of Medicine’s (Kohn, Corrigan & Donaldson 1999) landmark report *To Err is Human* stated that 44,000 to 98,000 Americans are thought to be harmed as a result of medical errors. It is argued that the potential lessons learnt from incident reports can rectify the prevalence of patient harm caused by human error and system failure.

Table 1: Key Definitions

Term	Definition	Reference	Example
Adverse Event	An incident that results in patient harm	Mahajan 2010	Administration of vincristine intrathecally (Reason 2004)
Clinical Incident	Any unplanned event which results in, or has the potential to result in harm to a patient	NSW Health 2007	A clinician failing to read out the route of administration of a drug (Reason 2004)
Error	All those occasions in which a planned sequence of mental or physical activities fails to achieve its intended outcome	Reason 1990	
Near Miss	Incidents that do not result in patient harm	NSW Health 2007	“Time-out” process that identifies the incorrect surgical site, prior to the surgical procedural being undertaken, resulting in the procedure’s postponement (NSW Health 2007)
Reportable Incident	An incident relating to the provision of health services by a relevant health services organisation, being an incident of a type prescribed by the regulations or set out in a document adopted by the regulations	Health Administration Act 1982	Administration of vincristine intrathecally (Reason 2004)

It can be difficult to draw comparisons between incident reporting systems due to the variance in definition of what constitutes an incident. Such ambiguity regarding definitions can compound incident reporting resistance amongst clinicians (Stanhope et al. 1999). The lack of incident reporting definitions and requirements can impede incident reporting utilisation. A

study by Kaldjian et al. (2008) devised hypothetical incidents of varying severity, which were used to measure how a clinician would respond. It was concluded that doctors who knew the definition of an incident and what constitutes a reportable incident were 2 or 3 times more likely to submit an incident report. The focus of incident reporting systems can vary from severity, cause, and occupation of the staff involved (Pham et al. 2010). Additionally, the definition of commonly used terms such as adverse event or near miss can influence the type of incidents reported. In a study by Tamuz, Thomas and Franchois (2004) an incident reporting system based locally within a pharmacy department of a hospital was used to capture near miss incidents. It was demonstrated that pharmacists had varying definitions of a near miss incident, with some staff disregarding common errors, accepting them as part of routine work. It was concluded that a standard interpretation of a near miss would enhance incident reporting, which could lead to improved data analysis and learning. Hence, the opportunities to learn from reported incidents can be affected by the definitions and requirements that support an incident reporting system (Wallace 2010).

Incident Reporting Systems in Australian Healthcare

Incident reporting systems in healthcare are generally non-punitive, voluntary and confidential. Incident reporting systems are varied worldwide, with information stratified based upon incident type, severity, setting, or outcome (Pham et al. 2010). As previously mentioned, IIMS is the primary incident reporting system within the Australian healthcare industry. IIMS was originally developed by the Australian Patient Safety Foundation in 1987 and has undergone a series of upgrades and revisions (Runciman 2002). The original version of IIMS was specialty

specific, with a focus on incidents related to anaesthesia. Data entered into the original version of IIMS culminated in a ground-breaking Australian study that deduced 18,000 patients would have died as a result of their healthcare due to adverse events, captured by incident reporting (Wilson et al. 1995). Subsequently, IIMS was expanded in 1993, to implement and trial a generic version. Thereafter, comparisons with similar incident reporting systems in the United States of America (USA) demonstrated a discrepancy that showed 16.6% of incidents in Australia were associated with an adverse event, compared to 3.5% in the USA (Wilson et al. 1995). A review of this discrepancy revealed that incidents which were minor in nature were incorrectly classified as being associated with an adverse event, and that the correct percentage of adverse events in IIMS was identical to the USA counterpart (Runciman 2002). The aforementioned discrepancy is consistent with the challenge of definitional ambiguity and potential misinterpretation of data. IIMS emerged as the preferred method for determining system failures as opposed to medical record review (Runciman 2002), although this belief is challenged by other studies within the patient safety literature (Nuckols et al. 2009). IIMS has formed part of a broader clinical risk management strategy to effectively manage patient safety processes (Spigelman & Swan 2005). The aggregation of incident data for analysis and action is reviewed at a national level, coordinated by the Australian Institute of Health and Welfare (AIHW), the national body responsible for the collection of national health statistics (Runciman 2002).

In 2005, IIMS was implemented across the NSW Health system. IIMS is accessible via the local hospital or facility intranet, and incident forms can either be submitted via a dedicated website

or in hardcopy. The online version has mandatory fields that must be completed, which also requires the reporting staff member to assess the incident based upon a Severity Assessment Code (SAC) matrix. The SAC rating of the incident may trigger a management response that requires a submission of a Reportable Incident Brief (RIB) to the NSW Ministry of Health. Incidents that have a SAC 1 rating may have system wide implications, which would then require further investigation via a Root Cause Analysis (RCA). A NSW Health incident management report for the period January 2009 to June 2009 showed SAC 1 incidents represented 0.52% (327 / 62,369) of incidents reported (CEC 2009). A series of recommendations to prevent similar incidents from occurring are submitted to the NSW Ministry of Health and the RCA report is authorised by the Chief Executive of the Local Health District (NSW Health 2007). Further investigation via an RCA for SAC 1 incidents is consistent with the literature, as incidents with a serious outcome may not contain the required information, such as the explanation for undesirable patient outcomes not attributable to patient care, to determine preventative measures (Nuckols et al. 2009). Further investigations such as a RCA can potentially be resource and time intensive (Pronovost, Miller & Wachter 2006a; Taitz et al. 2010), limiting the expediency of feedback to the frontline.

The aggregation of IIMS data at a state level is collated and reviewed by the NSW Ministry of Health and the Clinical Excellence Commission (CEC). The latter organisation is 1 of 4 'pillars' of the NSW Health System, who is primary objective is improving patient safety and quality. Additionally, the CEC analyses the IIMS data for emergent trends and responds with patient safety programs. An example of such a program is the recent 'Between the Flags' patient safety

initiative, which is aimed at recognising the signs of the deteriorating patient (CEC 2009). Per NSW Health policy, the focus of IIMS is on clinician accountability for working toward patient safety improvement, rather than accountability for individual mistakes (NSW Health 2007; Hor et al. 2010).

A Productivity Commission (2009) report showed that 59 sentinel events occurred in NSW public hospitals in 2007-08. At the time, the NSW Government defended the figures, having stated that NSW had better systems for collecting and reporting incident data than other state counterparts (Sharp 2010). It is argued that this example is a demonstration of the necessity to analyse incident reporting systems in context. Increased incident reporting rates may give the illusion of ineffective patient safety initiatives, whereas the actual explanation could be attributed to improved incident reporting practices (Franklin et al. 2007).

Whilst not the focus of this research study it must be acknowledged that controversy surrounds the validity of RCAs as a learning mechanism. Nicolini, Waring & Mengis (2011b) describe how RCAs is used as a governance tool and a means to restore organisational legitimacy following an incident – that being, the process is more important than the outcome. Furthermore, RCAs emphasise the details regarding the incident rather than focusing on preventative means (Nicolini, Waring & Mengis 2011b). Vincent (2004) states that RCAs are a gross oversimplification and that a chain of events typically leads to the eventual incident. Additionally, Carroll (1998) agrees that RCAs focus on a single cause approach rather than the exploration of multiple contributory factors. It is suggested that RCA investigators adopt the

approach as facilitator of organisational change rather than that of professional investigator (Nicolini, Waring & Mengis 2011b).

Inter-Jurisdictional Comparison of Adverse Events

In a 1995 Australian study it was reported that 16.6% of people admitted to hospitals experienced an adverse event associated with their care (Wilson et al. 1995). A subsequent review conducted in 2004 by the former Australian Council for Safety and Quality in Health Care indicated that the Australian adverse event rate was closer to 10% of hospital admissions (Australian Council for Safety and Quality in Health Care 2004). The Australian adverse event rate is comparable to other countries, such as Sweden, 12.3% (Soop et al. 2009) and the United Kingdom, 8.7% (Sari et al. 2007). According to The Commonwealth Fund (2006) the Australian rate of deaths due to medical error per 100,000 in 2004 is similar to the median rate for all other Organisation for Economic Co-Operation and Development (OECD) nations.

Importance of Reporting

Incident reporting systems must be carefully reviewed in order to initiate the appropriate management response. For those incidents that involve negligent acts the individual(s) involved must be reported to the appropriate registration boards, which may result in de-registration. In Australia this is supported by legislation, namely the *Practitioner Regulation (Adoption of National Law) Act 2009*. Since October 2008, healthcare providers are legally obligated to report other providers if there is reasonable belief that unprofessional conduct, professional misconduct or notifiable conduct is present (Australian Health Practitioner Regulation Agency

2010). Whilst risk attributed to the offending individual is typically addressed via the appropriate registration board the risk exposure to the patient is addressed via the appropriate incident management response.

Despite the abundance of patient safety literature, incident reporting systems in healthcare remain fragmented, isolated and relatively immature (Pham et al. 2010). The importance of understanding and correctly interpreting incident reports cannot be overstated as erroneous interpretations can have a detrimental effect on patient safety. Additionally, the understanding of incident reports can be varied due to the diversity of professions between the reporting staff member and the staff member responsible for the management of the incident (Pham et al. 2010). In the National Health Service (NHS) of the United Kingdom patients and their families have access to report safety incidents. The wide accessibility of incident reporting could potentially increase the number of incidents reported; however, the information entered must be articulated correctly by the incident reporter, otherwise this could affect the appropriate response mechanism (Franklin et al. 2007). In a study by Pham et al. (2010) it was demonstrated that there was an increase in wrong site surgery reports after the implementation of a program to decrease such incidents. However, it was deduced that the increase was likely due to the promotion of reporting practices. Hence, due to the presence of underreporting, an increase must be carefully examined before declaring the success of a patient safety initiative. As previously mentioned, increases in reporting rates can be subject to the interpretation of a misinformed media and public (Pham et al. 2010), as it could be

concluded that the quality of patient safety is deteriorating and respective initiatives are ineffective.

Management of Incident Reports

Healthcare providers must understand their individual role in the incident reporting and management process. It has been demonstrated that incidents can be escalated to management in order to relinquish the incident management responsibility of local level providers (Hor et al. 2010). Furthermore, clinical staff that disengage from incident reporting practices believe that incident reporting is a time consuming process that decreases the time spent on direct patient care (Hor et al. 2010; Mahajan 2010). Whilst patient care remains the top priority, the time spent on incident reporting by clinical staff must be substantiated by feedback and patient safety improvement. The continued involvement of clinical staff is believed to have a training effect in relation to incident reporting practices, particularly on the report narratives and quality of data entered (Nuckols et al. 2009). Thus, a better understanding of incident reporting systems by frontline staff will result in improved quality of data for which patient safety initiatives are based upon (Frey et al. 2002).

Patient safety initiatives can be impeded in the absence of systems that monitor the impact of actions implemented, derived from incidents reported (Wallace 2010). It is imperative to ensure frontline staff are involved in the management of incidents to encourage future reporting. By participating in the incident management process it is believed staff will be encouraged to report incidents, enabling direct observation of subsequent improvements to

patient safety (Wallace 2010). The measurement of success for incident reporting systems must be the prevention of incidents. The emphasis on prevention is supported by patients and families that have been the victims of medical error (Sorenson et al. 2009). Patient safety initiatives based upon incident reporting have successfully reduced the reoccurrence of reportable incidents. One of the most referenced examples in the literature is a study by Pronovost et al. (2006b), which showed that catheter-related bloodstream infections, documented via incident reporting systems, decreased by up to 66% over an 18 month study period following a series of evidence based interventions (e.g. hand washing, cleaning the skin with chlorhexidine) and an intensive care checklist protocol, preventing up to 1,500 hospital-related deaths. The weight of evidence seems to suggest that the credibility of incident reporting can be enhanced via effective patient safety initiatives that arise from the analysis of incident reporting data.

There is debate amongst the literature as to whether patient safety initiatives should be focused on adverse events (Frey et al. 2009), near misses (Kessels-Habraken et al. 2010), or both (Mahajan 2010). In a study by Nuckols et al. (2009) 2,200 incident reports were grouped according to the type of event: outcome oriented or process oriented. This study showed that 96% of outcome oriented events and 25% of process oriented events were determined to be preventable. The level of risk increases when patient care deviates from standardised processes, which demands that system improvements must be made, despite whether the outcome was patient harm (Nuckols et al. 2009). Although, Nuckols et al. (2009) acknowledged

that a limiting factor when determining preventability is the subjectivity associated with the perceived level of risk and incomplete incident reports.

Catastrophic events can be transformed into learning opportunities. Madsen (2009) suggests that organisations learn differently in response to a disaster, as opposed to a minor incident (or near miss). Disasters often attract media interest and their subsequent investigation can take place in high-visibility forums such as a public inquiry (Nicolini, Waring & Mengis 2011b). Learning from disasters depreciate less rapidly than a minor incident (Madsen 2009) as disasters can yield rich insight into an organisation's strengths and weaknesses, due to non-routine event associated with a disaster (Lampel, Shamsie & Shapira 2009). Formal investigative processes are considered the norm during and after a disaster; however, there is value in informal communications, which can assist in achieving organisational effectiveness (Elliot 2009). Feedback mechanisms such as that featured in this research study can be considered a version of informal communications. Furthermore, the occurrence of incidents and subsequent feedback can serve as a reminder to organisational participants of their responsibilities in relation to compliance with existing safety routines (Madsen 2009).

In summary, it is believed that a value of incident reports, particularly those associated with near miss events, exposes latent system impediments that will ultimately escalate to active system failures, if ignored. Thus, an organisation's culture that undervalues incident reporting, particularly near miss incidents, is a safety concern prevalent in most incident reporting systems of the OECD countries (Pham et al. 2010). In order to encourage incident reporting

there must be robust patient safety programs and tangible improvements which must be demonstrated to frontline staff in a timely manner (Tighe et al. 2006), which can be effectively achieved via feedback.

The Value of Incident Reporting

Incident Reporting and Feedback

Incident reporting systems emphasise methods that encourage reporting, rather than the lessons and practice improvements that can be extracted from incidents (Wallace 2010). It is a concern that incident reporting systems do not provide feedback to staff, potentially resulting in missed opportunities to correct erroneous or substandard practices. An American study of 338 participants shows that half of doctors surveyed indicated they would be more inclined to report errors if feedback was provided to them (Kaldjian et al. 2008). The consequence of no feedback provided to the reporting staff member can lead to the recurrence of the incident, which may result in patient harm. A study by Wallace (2010) showed that only two-thirds of trusts within the NHS provided feedback to the staff who reported an adverse incident, advising on how the incident is being managed. It is noted that this feedback system does not involve near miss incidents. Additionally, the same study by Wallace (2010) shows that one-third of NHS trusts did not analyse near miss incidents. This is in contrast to a study by Mahajan (2010), who argued that near miss reporting could produce valuable learning opportunities respective of patient safety, without the near miss incident having resulted in actual patient harm.

Underreporting incidents and lack of feedback can have economic ramifications. For example, the results of a study by Soop et al. (2009) showed that preventable adverse events led to a mean increased length of stay of 6 days. Similar studies show that adverse events can lead to a mean increased length of stay of 8 days (Sari et al. 2007), and even up to 4 weeks (Davis et al. 2003). These studies indicated that preventable incidents could impose greater constraints on financial and staff resources.

Incident Reporting and Patient Safety

A national spotlight remains on the importance of incident reports and its potential contributions to patient safety. The Australian Commission on Safety and Quality in Health Care (ACSQHC) regularly promote the use of incident reporting systems, open-disclosure, and sentinel events reporting. This is exemplified by incident reporting being included as a priority in the proposed National Safety and Quality Framework (ACSQHC 2010). Disparity remains at state level incident reporting systems and the absence of a national repository of incident reporting data limits comparisons to hospital patient safety performance. The consistency across state, national and international jurisdictions is the lack of feedback or the perception that no action is driven by incident reporting, resulting in a disincentive to incorporate incident reporting as routine, established practice (Pham et al. 2010). Feedback is an essential, yet overlooked component of the incident reporting process, as it is not the reports themselves but their capacity to lead to the development of coordinated solutions and system-wide interventions (ACSQHC 2010).

Near Miss Reporting

The literature shows that the absence of near miss incidents can result in missed opportunities for lessons to be provided to frontline staff, particularly since near misses occur more frequently than adverse events (Mahajan 2010). Both adverse events and near misses contain educational characteristics, as feedback from incident reports can correct errors made by staff (Tamuz, Thomas & Franchois 2004). Organisations that do not capitalise on the learning and development aspects of incident reports can impede potential patient safety improvements (Kingston et al. 2004).

Lessons from Other Industries

The aviation industry is renowned for its contributions to safety research and developing incident reporting systems. Wilson (2007) described the aviation industry as being a high reliability organisation. This is further explained by Reason (2000) as aviation organisations have a collective preoccupation with the possibility of failure. Since errors in the aviation industry can have catastrophic outcomes, coupled with heightened visibility of plane crashes to the public, aviation is dependent on its image and reputation of safety (Jimenez 2005). The foundation of aviation safety is crew resource management (CRM), developed in the late 1970s (Sax et al. 2009). CRM training focuses on situational awareness and team-based communication. This is exemplified by the extension of its original form of cockpit resource management, to now include flight attendants and engineers. The literature acknowledged that despite the success of CRM it has been met with resistance from some pilots (Helmreich, Merritt & Wilhelm 1999). This is most evident in cultures where respecting authority at the

expense of communication with sub-ordinates is entrenched, which impedes the effects of CRM. This is paralleled with the culture in healthcare, where doctors are perceived to be the authoritative figureheads that are not to be challenged.

Aviation has implemented incident reporting systems such as the aviation safety action program developed by the Federal Aviation Administration (2010). The basis of this system is to encourage confidential, voluntary, non-punitive reporting by pilots and airline crew staff. For this reason, the management of this reporting system is conducted by the National Aeronautics and Space Administration (NASA) – a neutral party with no power of enforcement or discipline. Furthermore, should a staff member violate a safety rule, the Federal Aviation Administration will afford immunity if the staff member can provide proof that the violation was submitted to the incident reporting system and is considered as a constructive attitude towards safety. The immunity afforded by the aviation industry is akin to the ‘Good Samaritan’ statutes in healthcare, where protection against civil liability is afforded to clinicians that provide emergency medical care to a patient as long as the clinician did not have a duty to provide such care (Brown 2010). The commonality between aviation and the healthcare industry is the prevention of incidents and mitigation of system failures. As such, this has led to the healthcare industry implementing reporting principles adopted from aviation based incident reporting systems.

As previously discussed, CRM based interventions utilised within the aviation industry have been adopted within healthcare to improve team performance and communication. A study by

McCulloch et al. (2009) showed that CRM principles were used to improve the performance of a clinical team, which led to improved technical performance in operating theatres. This improvement in technical performance resulted in a reduction of average technical errors per operation (from 1.73 to 0.98). It is noted that this intervention was stratified by the presence (or absence) of a mentor, whom stimulated team briefings. The researchers of this study postulated that the presence of the mentor enhanced retention of knowledge. This justifies the use of feedback in incident reporting systems, as the retention of lessons derived from such systems may be enhanced by briefings and team discussions. In a similar study by Sax et al. (2009) it was demonstrated that CRM training interventions resulted in an increased use of a preoperative checklist, which was modelled from a pre-flight aviation checklist and modified to enhance patient safety. Furthermore, CRM principles have improved reporting frequencies (Sax et al. 2009) and increased awareness of patient safety (de Korne et al. 2010).

Other industries such as nuclear energy, manufacturing, petrochemical and mining have similar incident reporting systems to that featured within healthcare. The relationship between these systems and healthcare are scantily explored in the literature. In relation to incident reporting in the nuclear energy industry the Nuclear Regulatory Commission (NRC) required incident reporting within 24 hours of “any intentional, or suspected intentional, diversion of radioactive material from its intended or authorised use”. Macilwain (1996) stated that this regulation is to identify near miss incidents that may have industry wide implications. The commonality in the NSW Health system with this regulation is the requirement that all incidents rated SAC 1 or 2 are escalated to senior management and the NSW Ministry of Health (CEC 2009) within a 24

hour period; which could arguably enable the sharing of patient safety interventions that have system wide implications (Hor et al. 2010).

Common Problems of Incident Reporting

Lack of Transparency

Open Disclosure processes have been mandated in several international healthcare jurisdictions, such as the United Kingdom, Canada, and the USA due to high public expectations and increased media attention regarding healthcare system failures. The ethical responsibilities of clinicians are variably applied in relation to incident reporting systems, particularly Open Disclosure to the patient in response to an adverse event. Studies in the field of medical error (Iedema et al. 2008; Sorenson et al. 2010) argue that clinician accountability and admission to the patient following an adverse event is an integral part of the recovery process. The Open Disclosure process elicits the humanitarian aspects of healthcare professions. However, clinicians can erect barriers to this process; dismissing patient involvement as futile given that the technical skills of their professions are beyond the understanding of the patient. This is evident in a study by Gallagher et al. (2006) as 60% of doctors surveyed reported they would be less likely to disclose an error if they believed the patient would not understand. Conversely, patients are more receptive when clinical staff not only explain the diagnosis but provide an interpretation that would allow the patient to have a better understanding of their care (Boudreaux & O’Hea 2004). In Australia, the need for discussions between healthcare providers and patients on the consequences of adverse events has resulted in the Australian Open

Disclosure Standard (ACSQHC 2009). Hence, this author argues that communication principles and guidelines must be developed and implemented by clinicians to facilitate clinician-patient communication, which will prove meaningful to both parties. Furthermore, such improvements in communication may overcome litigious patient behaviour that causes clinicians to avoid incident reporting and Open Disclosure processes (Kaldjian et al. 2008). The Open Disclosure principles are prominent in the Patient Rights and Responsibilities of NSW Health, including the former Sydney South West Area Health Service (SSWAHS), which stated that patients have a right to understanding their conditions and the associated risks (SSWAHS 2008). Hence, it is argued that incidents affecting a patient's care must be promptly discussed with the patient in order to acknowledge their experience and advise them of the response to mitigate recurrence of the incident (Sorenson et al. 2009).

Fear of Litigation

Fear of litigation has been identified as a barrier to incident reporting, particularly by the medical profession (Iedema et al. 2008). Clinician resistance in relation to Open Disclosure advocacy is believed to be explained by clinicians' resistance to engage in the process due to fear of litigation (Kaldjian et al. 2008). This barrier shared amongst clinicians is repeated in a study by Studdert et al. (2006), which demonstrated that 73% (653 / 889) of injuries due to error resulted in litigation. A potential mechanism to overcome litigious outcomes was explored in a study by Wallace (2010), which reviewed a practice within the NHS that included a patient in the incident investigation process, only if the incident was treated as a complaint. In contrast, Iedema et al. (2008) argued that a patient's involvement should occur regardless whether there

is a likelihood that the incident will result in a complaint, as patients can offer insight into incidents for the purpose of service improvement. Additionally, Iedema et al. (2008) noted that patients' felt discussions regarding adverse events were not promptly disclosed, that healthcare organisations were not forthcoming with information and that these discussions had to be initiated by the patient themselves. Furthermore, several patients interviewed as part of the study stated they had to insist for an Open Disclosure process to take place. This raises the concern that the lack of timely feedback from incident reporting systems affects staff and patients alike. A study by Gallagher et al. (2006) showed that two-thirds of doctors agree that disclosing a serious error reduced malpractice risk and one-third would disclose a near miss. Furthermore, patients' that pursue an Open Disclosure discussion seek an apology or assurance that recurrence will be prevented, rather than compensation (Sorenson et al. 2010). The Open Disclosure process can also exonerate healthcare providers of guilt from their involvement of an error, particularly those resulting in patient harm (Sirriyeh et al. 2010). This author shares the belief that patient safety opportunities identified by clinicians via the Open Disclosure process can be replicated via the promotion of learning opportunities from incident reporting. Medical staff are widely known for adopting an insular approach in response to clinical errors (Gallagher et al. 2006; Kaldjian et al. 2008); however, a demonstration of what benefits Open Disclosure and incident reporting can achieve for staff and patients alike may overcome barriers synonymous with the medical profession.

Patients harmed by medical error within New South Wales (NSW) may submit a complaint and pursue legal action via organisations such as the NSW Ombudsman or the Health Care

Complaints Commission (HCCC). The latter organisation was established under the *Health Care Complaints Act 1993* and in 2008-09 there were 85 matters that resulted in litigation (HCCC 2009). However, it is noted that these matters do not indicate whether medical error was the primary cause of the complaint, nor whether it was present at all. Furthermore, the literature cites perceived negligence by the patient as motivation to pursue litigation (Davis et al. 2003). Countries such as New Zealand have abolished tort liability and introduced a 'no fault' system that affords legal privilege to clinicians (Davis et al. 2003). Similarly, this 'no fault' system exists in the aviation industry (Federal Aviation Administration 2010), to encourage incident reporting, under the principle of safety improvements. Conversely, it is argued that 'no fault' systems may eliminate a legal deterrent to clinicians, resulting in substandard clinical practices (Davis et al. 2003). A study by Davis et al. (2003) showed the rate of adverse events were similar to the Australian and USA tort liability systems, which suggests no association between the legal environment and the quality of patient safety. Thus, whilst the underlying principle of removing tort liability is to encourage the disclosure of an error, the utility of such disclosure may have a stronger impact on patient safety improvements. In other organisations such as the Minnesota Department of Health, the Adverse Health Care Events Law introduced in 2003 requires hospitals to report if 1 of 28 different types of adverse event has occurred, within 15 days of the event. A review of this mandatory reporting system 5 years following implementation saw that 72% of hospitals feel safer compared to 2003 (Minnesota Department of Health 2009). It is interesting to note that regardless of patient safety accomplishments the Minnesota incident reporting model still has non-compliant clinicians. This barrier to incident reporting is compounded by clinicians from neighbouring jurisdictions that have different

incident reporting frameworks (Minnesota Department of Health 2009), suggesting that clinicians will adopt the practice that suits them most. This author believes that this jurisdictional challenge would particular apply in rural areas where retention of clinicians, necessitating “fly-in” clinicians, is prevalent. Furthermore, in the absence of universal or consistent incident reporting systems and practices across neighbouring jurisdictions, then such a transit clinical workforce will require specific training and support to ensure accuracy if and when utilising these systems (Runciman et al. 2006). The Minnesota Department of Health (2009) argued that inconsistent reporting practices across multiple organisations can inhibit the utilisation of reporting systems, further providing justification for a consistent approach to such systems.

Accountability and Causes of Incidents

The accountability for reportable incidents has caused widespread debate within public health industries worldwide (Pham et al. 2010). There is much literature that supports the notion that systemic factors are the cause for near misses, errors and failures (Evans et al. 2006).

Conversely, there have been scholarly arguments that suggest individuals must be held accountable for any incidents that they have contributed to (Hor et al. 2010). The challenge is how to obtain a clear distinction to identify the underlying contributing factor of an incident.

A study by Gallagher et al. (2006) showed that from a survey of 2,637 physicians there was a division of belief on whether “medical errors are usually caused by failures of care delivery systems, not the failure of individuals”, with 50.4% agreeing and 49.6% disagreeing. It is the

challenge of incident reporting systems to determine whether a system failure or human error was the underlying cause of either an adverse event or near miss. This challenge can be perpetuated by the inherent human compulsion to attribute blame to an individual. Ross (1977) describes this as 'the fundamental attribution error'. Additionally, Reason (2000) suggests that blaming individuals is emotionally satisfying than attributing such blame to an organisation. It is blame towards an individual, as opposed to blaming the system, which acts as a barrier to incident reporting (Waring 2005). Kingston et al. (2004) argued that blaming the system is less confronting than blaming an individual, as exposing a healthcare provider's error can have professional, legal and personal ramifications, further deterring incident reporting utilisation.

The patient safety literature advocates that human error is inevitable and systems must be designed to mitigate these mistakes (Leape 1994). Accountability must be attributed to those responsible for the implementation of system improvements, based on incident reporting systems (Vincent, Stanhope & Crowley-Murphy 1999). System failures can be used by clinical staff as a means to relinquish their individual accountability. This presents a situation where blaming the system becomes the precedent as opposed to acknowledging individual shortcomings. Yet, if system failures were the cause of an incident the individual is accountable to report these failures so an appropriate intervention can be developed. Thus, 'blaming the system' can become redundant if system failures are not locally identified and rectified. However, it is acknowledged that the feedback void from incident reports can promote the lack of accountability of those responsible, specifically in relation to productively utilising incident reporting data to address system failures (Benn et al. 2009).

Incident reporting can be influenced by accountability pressures at the local level (Hor et al. 2010). A study by Hor et al. (2010) showed that clinical staff may reduce the SAC rating of an incident in order to prevent the escalation of the incident to senior management and avoid reporting requirements to the NSW Ministry of Health. The reluctance to involve senior staff in the management of an incident demonstrates that frontline staff hold the view that local methods are less disruptive than formal investigative processes. Although, Hor et al. (2010) suggested that the involvement of senior management may be advantageous, given their broader reach and authority. Hor et al. (2010) continues, stating that the involvement and authority of senior management can be useful if an identified patient safety issue has system wide implications.

The literature suggests that healthcare providers found to deliberately divorce themselves from patient safety systems, and by doing so forego opportunities to prevent patient harm, are to be held individually accountable for their actions (Moss & Martinko 1998). Hor et al. (2010) stated that exposing deliberate or even malicious human error may prove challenging due to collegiate protection of the respective discipline; particularly prevalent in the medical fraternity (Kaldjian et al. 2008). Thus, the use of incident reporting system can be interpreted as an act of retribution against colleagues and a violation of the preference for managing incidents within a profession, removed from management intervention. In order to avoid underreporting due to a punitive management approach the accountability within incident reporting systems must be based towards quality improvement and patient safety (Pham et al. 2010).

The Underreporting Phenomenon

The challenge of incident reporting systems is the phenomenon of underreporting (Alvarez-Requejo et al. 1998; Hazell and Shakir 2006). It is documented (Wallace 2010) that a lack of feedback from incident reporting systems contributes to a perceived lack of utility of such systems, resulting in the deterrence from its use. Kaldjian et al. (2008) stated that an active learning environment with a focus on patient safety and clinical improvements is impeded by incident reporting systems that do not support the exchange of information. Additionally, clinical staff often do not witness improvements in patient safety that are derived from the incidents that they report as part of their daily tasks; causing frustration amongst clinical staff, who cite an overburdening workload and lack of time as justification to ignore incident reporting (Lawton & Parker 2002; Mahajan 2010; Wallace 2010).

Critique of Current Literature

An Australian survey of IIMS users described the benefits of IIMS, specifically the promotion of patient safety and system improvements (Spigelman & Swan 2005). The latter was supported by significant changes to equipment use, medication prescribing or administration standards, new policies or protocols for clinical care, training programs, falls and pressure ulcer risk assessment tools (Spigelman & Swan 2005). Conversely, limitations identified included low rate of incident reporting by medical staff, difficulties in measuring improvements in patient outcomes, and the time consuming nature of reporting incidents (Spigelman & Swan 2005). These limitations are consistent with the literature (Evans et al. 2006; Mahajan 2010; Stanhope

et al. 1999). The survey also demonstrated the advantage of customising incident reports based upon specialty focused incident reporting systems. A prominent example of specialty based incident reporting systems is by Wu, Pronovost and Morlock (2002), which focuses on incidents within an Intensive Care Unit (ICU). It is noted that specialty based incident reporting systems predated modern, generic incident reporting systems in Australia (Beckmann et al. 1996). Despite the consistency with the literature the conclusions drawn from the survey by Spigelman and Swan (2005) is limited due to a relatively small sample size of twelve participants. Additionally, the design of the questionnaire focuses on the benefits of IIMS, which is arguably a form of 'lead-in' questioning, as there is a presumption that there have been benefits as a result of IIMS. Another common barrier to incident reporting, explored by the aforementioned questionnaire, is the time required to enter an incident into the respective reporting system. Dependent on the complexity of the incident reporting system staff can contribute hours of unpaid work to enter data into these systems (Spigelman & Swan 2005). The administrative component of incident reporting systems may act as a deterrent to clinical staff, as entering incident reporting data may be seen as time being spent away from direct patient care, evidenced within the literature (Hor et al. 2010). Staff must be assured that incident reporting data can lead to increased visibility of boundaries within the operational environment and can also educate those within such an environment to recognise these boundaries (Rasmussen 1997). To understand the opportunities and limitations of this study a thorough literature review was conducted and several key themes emerged, as follows:

Lag in Reporting and Feedback

Studies in the field of patient safety focus on improving incident reporting rates rather than the feedback component and subsequent lessons (Wilson 2007). Whilst the literature has established that delayed feedback is a barrier to incident reporting (Evans et al. 2006; Jha et al. 2010) there is scant evidence that addresses how the timeliness of incident report submission and feedback have resulted in patient safety improvements. Lag between observation and submission of the report is prevalent in hospital incident reporting systems on a global scale (Hirose et al. 2007; Regenbogen et al. 2009). Longer lag times are evident when incidents are reported by doctors compared to other healthcare professionals (Regenbogen et al. 2009). Additionally, lag times for reporting minor events are double that of major events, independent of healthcare profession (Regenbogen et al. 2009). This is supported by Frey et al. (2002) that stated events that cause harm to a patient are reported expeditiously when compared to near misses.

Feedback mechanisms such as automatic emails to Quality Managers and discussions at morbidity and mortality meetings may take months to reach frontline staff (Freestone et al. 2006; Tighe et al. 2006). A study by Freestone et al. (2006) showed that serious incidents are escalated to the hospital Risk Manager for immediate analysis; however, the timeliness of feedback mechanisms were not recorded, nor was there an indication that feedback was provided directly to the reporting staff member. Personal digital assistants and other electronic recording devices have been used to expedite the reporting of incidents but have failed to capitalise on the electronic transmission of feedback (Bolsin, Faunce & Colson 2005).

Explanations regarding why lag is greater in near miss incident reports compared to adverse events are scantily accounted for in the literature. It is maintained that the root cause of near misses is the same for adverse events (Jimenez 2005). Thus, the same opportunities exist for remediation of incidents reported and promotion of patient safety regardless of incident severity. In a study by Ursprung et al. (2005) a short cycle patient safety audit was conducted in a neonatal intensive care unit. This study deviated from traditional incident reporting systems that focus on adverse events, but rather routine monitoring of everyday care, identifying errors and immediately addressing them with clinical staff. This exploratory study facilitated staff engagement, due to the immediateness of the real time patient safety audit and short cycle feedback, which empowered staff in identifying patient safety improvement opportunities (Ursprung et al. 2005). In an environment that is starved of short cycle feedback, it is expected that this research study will demonstrate an improvement in staff satisfaction; similar to the findings made by the aforementioned study. There are further parallels between the study by Ursprung et al. (2005) and the research study by this author; namely, the use of an incident reporting system as a learning tool as opposed to simply a repository for incident reports. Ursprung et al. (2005) recognised the opportunities for individual competency improvement via lessons learnt from incident reporting systems – a theme that features throughout this research study.

Perceived Lack of Utilisation (and Clinician Engagement)

The active engagement of clinical staff is essential for the successful implementation of patient safety initiatives and quality improvement (Davies, Powell & Rushmer 2007). However, clinical

engagement is seen as a major challenge in incident reporting due to a lack of feedback provided to frontline staff (Mahajan 2010). The literature demonstrates that both medical and nursing staff resist the use of incident reporting systems as there is a perceived lack of utility and no tangible changes that arises from the submission of an incident (Mahajan 2010). It was deduced that clinicians associated the need for error reporting with the severity of the error and subsequent outcome (Kaldjian et al. 2008). This introduces the concept of severity bias, which suggests that clinicians are motivated to report based on the severity, which practically translates to the magnitude of patient harm. Furthermore, this would explain the underreporting of near miss incidents by clinicians (Basu et al. 2009). To the contrary, accidents gradually develop over time due to several small failures, both system and the individual (Qureshi 2008); ultimately resulting in an adverse event. The severity of an incident is not indicative of the educational opportunities nor the significance of a contributory human error. As previously stated, near miss incidents carry learning opportunities without resulting in patient harm (Kessels-Harbraken et al. 2010). Since patients are not exposed to harm in a near miss incident the likelihood of litigation against a clinician is minimal, thus eliminating fear of litigation as a barrier to near miss incident reporting.

It has been documented that clinicians believe errors are inevitable and incident reporting is therefore pointless (Waring 2004). Despite the extensive literature on barriers to incident reporting there are few practical recommendations to overcome these cultural issues. Shekelle (2002) suggested the focus on patient safety should be redirected from quantifying and categorising the incidents reported to ways in which patient care can be improved. Clarke et al.

(2010) stated that the provision of formative feedback to clinicians must be the foundation for quality improvement initiatives, as it is ultimately the clinician's responsibility for patient care. However, Mahajan (2010) argued that it is the 'blame and shame' cultural belief, synonymous with incident reporting, that perpetuates the challenge of clinician engagement. Therefore, the responsibility for patient care should be equally shared with clinicians, nurses and managers alike, as incidents are largely attributed to system issues compared to individual performance (Wilson 2007).

The timeliness regarding provision of incident reporting may impact upon the utility of the feedback once received by the reporting staff member and / or frontline staff. A study by Tighe et al. (2006) indicated that the purposes of learning from incidents reported were compromised due to at least a 1 month lag time between reporting and resolution of the incident. A study by Evans et al. (2006) indicated that a lack of feedback was a significant deterrent to incident reporting. This discourages incident reporting and results in a culture of underreporting, particularly by the medical profession (Mahajan 2010; Braithwaite et al. 2010). The utility and influence of incident reporting systems on clinical practice is enhanced when feedback is delivered at the time of decision making (Jamtvedt et al. 2006). Evans et al. (2006) argued that if feedback is to generate an improvement in staff performance then it is a condition that feedback must be provided within a short cycle timeframe. To complicate this issue is the variability of feedback timeliness and practicality. The system of feedback is diverse ranging from quarterly analysis of incident by a quality assurance group (Frey et al. 2002) or monthly discussions at morbidity and mortality meetings (Bolsin, Faunce & Colson 2005). Lemley et al.

(2007) showed that students who received immediate feedback performed better in a final examination compared to students who received delayed feedback. This is supported in a study by Dihoff et al. (2004) that showed immediate feedback assessment techniques enhanced examination performance. The duplication of these educational feedback techniques is limited in healthcare due to fast-paced, unpredictable environments such as an emergency department (Yarris et al. 2009). The literature has showed a clear understanding that the effectiveness of feedback is a means to overcome incident reporting barriers (Mahajan 2010); however, there is scant evidence to suggest that patient safety intervention efforts were strengthened by expeditious feedback.

Formative Feedback vs. Punitive Feedback

The provision of formative feedback can enhance retention of knowledge and lead to improvements in technical skills performance (Porte et al. 2007). Conversely, punitive feedback can contribute to a culture of blame (Lake & Landau 2007) and fear of punishment from the submission of incident reports (Kingston et al. 2004). In order to maximise staff engagement with incident reporting systems the former style of feedback is preferred compared to punitive feedback, since non-punitive feedback will enhance staff acceptance of incident reporting systems (Farley et al. 2008). The appropriateness of punitive feedback is inconclusive, particularly since there is scant literature in relation to its use within incident reporting systems. Punitive feedback is likely to be exercised when poor performance is attributed to a lack of effort as opposed to lack of ability (Moss & Martinko 1998). Thus, it may be considered that punitive feedback may have use in response to incidents derived from negligent behaviour;

although, the challenge remains in relation to empirically confirming the presence of such negligence and the culpable staff members. Furthermore, the style and method of feedback provided can influence memory retention in relation to lessons learnt from incident reporting. Porte et al. (2007) demonstrated that expert verbal feedback is superior to computer-generated augmented feedback in the acquisition of new surgical skills. This is due to the former providing feedback on multiple factors that composed the task. Porte et al. (2007) suggests that written feedback generated from an incident reporting system would be complemented by verbal expert feedback, to increase the understanding and retention of knowledge, as opposed to the 2 methods in isolation. Another study by Rego et al. (2009) confirmed that learning and development of medical students ($N = 159$) was improved by the use of verbal, formative feedback compared to a control group ($N = 162$). Croskerry (2000) emphasised that ineffective feedback can inhibit the development of clinical skills and result in increased error. Despite the style and method of feedback, the underlying objective is to affect learning and development, which ideally leads to improved job performance, measured by patient care (Fischer et al. 2006).

To summarise, despite the magnitude of patient safety literature the 'best practice' for incident reporting systems in healthcare is unclear (Pham et al. 2010). The preferred approach to incident reporting system are for non-punitive, voluntary and confidential reporting, in order to encourage reporting by frontline staff. In contrast, common barriers exist, particularly the challenge with converting incident reporting data into learning opportunities and system improvements. However, these improvements are impeded by a lack of feedback, which

diminishes the utility of incident reporting systems and discourages frontline staff (Mahajan 2010). Furthermore, individual accountability with incident reporting is viewed by frontline staff as in opposition to the patient safety principles of incident reporting systems (Pham et al. 2010).

The literature has not empirically demonstrated an association between incident reporting behaviour, feedback interventions and patient safety improvement. There is an assumption within the literature that a focus on understanding errors will lead to a reduction in their frequency (Kaldjian et al. 2008). Simply overcoming barriers to incident reporting may not result in improved patient safety, without the presence of practical initiatives delivered to frontline staff, supported by timely feedback (Croskerry 2000). The provision of feedback must be constructed to facilitate the improvement of individual performance, as well as addressing system vulnerabilities. Whilst the literature has identified the learning aspects of incident reporting systems (Wallace 2010) there are no empirical studies that measure the quality of lessons learnt and whether improvements in patient safety were achieved. Studies on the timeliness of feedback and the impact on organisational learning within a hospital setting remain unknown. It is the objective of this study to satisfy the knowledge gap and deliver feedback regarding lessons learnt from incidents to frontline staff, to achieve patient safety improvements.

Justification of Study

Delays in feedback from incident reporting systems can impede learning and improvements regarding patient safety (Tighe et al. 2006) and deter staff from utilising incident reporting systems (Mahajan 2010). This directly influences patient outcomes, as latent errors hidden within models of care continue undetected. Incident reporting is already viewed as a time-consuming, bureaucratic process by clinical staff (Waring 2005). Ineffective and delayed feedback diminishes the utility of incident reporting, in an already time-crucial environment. It is proposed that a short cycle of feedback will allow clinical staff to immediately correct work practices, reducing the frequency of errors that may otherwise contribute to a poor patient outcome.

Feedback acts as a psychological intervention for the reporting staff member, which encourages learning deduced from incident reporting data (Basu et al. 2009; Franklin et al. 2007).

Furthermore, the literature has shown that feedback on non-technical skills such as teamwork and communication can lead to improved technical outcomes and decreased error rates (McCulloch et al. 2009). If incident reporting systems continue to solely emphasise reporting rather than feedback then this alienates staff from a crucial part of the patient safety and improvement process.

Literature within the area of incident reporting systems is limited to lag time measurements between the observation and submission of the incident (Regenbogen et al. 2009). Further research is required into the timeliness of feedback provision and the effects on the retention of lessons learnt and applied by frontline staff. The literature showed that the reporting of an

incident is determined by its severity (Hirose et al. 2007); however, this should not suggest that lessons cannot be learnt from near miss incidents (Mahajan 2010). This area of study is limited by a lack of research into the utility of feedback, whether feedback contributed to improved job performance and whether prevention of incident recurrence was achieved. The absence of feedback from incident reporting systems will perpetuate resistance by clinicians (Evans et al. 2006) – an outcome that was found to be prevalent amongst pilots during the development of aviation safety systems (Helmreich, Merritt & Wilhelm 1999).

Research Opportunities Explored

Measuring Underreporting

It is important to determine the difference between reported incidents and observed incidents to understand the extent of underreporting, which can provide insight into the patient safety culture and reporting utilisation by frontline staff (Mahajan 2010). Lessons which improve individual job performance and system changes mitigate system failures and reduce the severity of reported incidents (Evans et al. 2006; Franklin et al. 2007). Furthermore, lessons learnt from incidents and provided in a timely manner to reporting staff members could assist in professional development and increase job satisfaction (Lemley et al. 2007; Raleigh et al. 2009).

Effective Feedback Mechanisms

There is debate within the literature in relation to the most effective feedback mechanism. The composition of these feedback mechanisms can be determined by:

- i) timeliness;
- ii) frequency;
- iii) source;
- iv) intensity;
- v) format; and
- vi) duration (Jamtvedt et al. 2006).

Structured feedback following an incident report would enable an evaluation of the effectiveness of the feedback, respective of the incident reported. The literature has demonstrated disparity amongst methodologies employed for audit and feedback systems. Ursprung et al. (2005) utilised an audit questionnaire, which was divided into 2 categories. One category focused on delays in care, equipment failure, communication, and laboratory studies, whilst the second category evaluated compliance with hospital policy and guidelines. The results proved that the 2 categories identified different types of errors. Nonetheless, Ursprung et al. (2005) confirmed several patient safety improvements were made, which were routinely audited over a subsequent sixteen month period. This produced data that showed continued compliance above 90%.

The focus of this study is to investigate the impact of timely feedback to clinical staff.

Importantly, as stated within the literature (Pronovost et al. 2004; Ursprung et al. 2005),

feedback on routine clinical work can identify a broad range of errors, which can be used to improve patient safety and outcomes. Timely feedback to clinicians can enhance their learning and development (Jolley et al. 2007), which can potentially decrease incident frequency and severity.

The provision of feedback to frontline staff will demonstrate the utility of incident reporting systems and determine whether it encourages reporting practices. The validity and applicability of the research question is substantiated by similar studies in the patient safety literature (Franklin et al. 2007). Clinician engagement is a widely documented barrier to incident reporting due to the lack of feedback provided from incident reporting (Braithwaite et al. 2010), which results in a perceived lack of utility of the incident reporting system (Warring 2005). Timely feedback directly to the reporting staff member is expected to overcome this barrier (Mahajan 2010), particularly if the feedback provided results in tangible patient safety improvements observed by frontline staff (Tighe et al. 2006). Studies that have focused on lag times within incident reporting system have focused on the lapse between the incident occurrence and the submission of the respective incident report (Hirose et al. 2007; Regenbogen et al. 2009). Hence, due to scant literature on the timeliness of feedback, it is proposed that this author's study will expand the patient safety and incident reporting literature by empirically studying the effect of short cycle feedback on incident reporting barriers, measured by an expected increase in incident reporting rates.

Organisational Learning Derived from Short Cycle Feedback

It is anticipated that the severity of incidents will decrease as a result of the short cycle feedback intervention of the proposed study. The intervention is expected to be accepted, considering that learning and development via feedback is sought after by frontline staff (Evans et al. 2006). The educational aspects of incident reporting systems make it a valuable tool for learning from errors, which lead to improved job performance and competency (Fischer et al. 2006). Whilst the medical profession believes that errors are inevitable and are thus accepted as part of medical practice (Fisher et al. 2006) it is constructive feedback derived from these errors that will improve performance (Croskerry 2000), which benefits the safety of the patient.

Croskerry (2000) argued that in order for feedback to be effective it must be provided as quickly as possible after the event. In the interest of patient safety it is believed that the provision of timely feedback will prevent the recurrence of an incident, which may otherwise cause patient harm if left unaddressed. Feedback is essential to the development of staff, particularly junior clinicians with respect to their acquisition and development of technical skills (Porte et al. 2007). As staff acquire the knowledge to correct their own clinical practices, identify and constructively change system deficiencies (Croskerry 2000) it is believed that this will lead to an improved patient safety culture, evident by a reduction in actual incidents.

The fundamental premise of this research is that short cycle feedback will produce changes in practices and outcomes regarding clinical practices and incident reporting, facilitated by facilitate single-loop learning. Furthermore, this single-loop learning will result in improved

incident rates, decrease actual incidents and decrease the severity of incidents, within the context of an acute healthcare setting. Single-loop learning should facilitate improvements in clinical practice and outcomes as a result of the learning process that occurs via short cycle feedback. Hence, the learning process that precedes single-loop learning and follows the provision of short cycle feedback enables the recipient personalised insights into their individual clinical practices, with the objective being to identify and implement improvements. This individual-level learning can be disseminated across the organisation, which would satisfy Argyris and Schon's (1978) definition of organisational learning.

Within the context of this study, single-loop learning theory informs the premise that a learning outcome will be achieved by the recipient of short cycle feedback. Argyris and Schon (1978) define single-loop learning as the improvement of performance, in accordance with existing values and norms, achieved by error-detection, review and remediation. Featured throughout organisational learning theory literature (Argyris & Schon 1978; Levitt & March 1988; Wang & Ahmed 2003) is the analogous description of a thermostat to describe single-loop learning. The thermostat is bound by specific thresholds to maintain the temperature of a defined space. Should the temperature of this space either increase or decrease beyond the specific thresholds then the thermostat will make the necessary adjustments to return the temperature to within the accepted levels. Hence, a single feedback loop is activated upon detection of non-threshold temperatures, which triggers the thermostat to intervene until the accepted threshold temperatures are achieved.

Within the organisational learning literature (Argyris & Schon 1978) the individual in receipt of short cycle feedback is considered to be an organisational agent. The achievement of single-loop learning by the organisational agent would translate into organisational learning upon dissemination of such learning outcomes. The method in which learning outcomes are shared to other organisational agents within the organisation can be achieved by vicarious learning. Miner and Mezias (1996) described vicarious learning as the observation of learning achieved by others and incorporating successful routines into their own practices. The observation of short cycle feedback by organisational agents could support individual-level learning (Lampel, Shamsie & Shapira 2009). Additionally, such an observation could alter the perceived utility of incident reporting systems and could motivate organisational agents to engage in incident reporting practices. Therefore, short cycle feedback can influence changes in the attitudes, knowledge and behaviour of organisational agents, which is evidenced by an increase in incident reporting rates. Respectively, this study aims to quantify the underreporting phenomenon; specifically, the proportion of submitted incident reports in which the author self-identifies or elects to be anonymous. If the condition of receiving short cycle feedback is to nominate the former, then it is reasonable to expect that organisational agents will both submit incidents reports and identify themselves. Such a change in behaviour is expected due to the incentive that single-loop learning will be a tangible outcome that can be applied to their organisational agent's individual clinical practices.

The impact of single-loop learning theory on participants' attitudes, knowledge and behaviour regarding incident reporting is measured by a comparison between the pre-intervention and

post-intervention questionnaires. As evidenced within the literature, staff within an acute care setting have the perception that incident reporting is a burden and any benefit derived from such reports is scant. It is theorised that short cycle feedback holds value in relation to single-loop learning for both the organisation and organisational agents. The absence of a defined procedure in relation to the provision of feedback from incident reporting throughout the NSW public health system has contributed to the concept of this research. In order to achieve single-loop learning, this researcher has defined the accepted norms and values in relation to the short cycle feedback system; those being, that feedback is provided by a feedback specialist within a 72 hour timeframe, directly to the self-identified author of an incident report. Whilst the primary objective is to achieve an improvement in clinical practice, facilitated by single-loop learning, other learning mechanisms can be achieved.

Double-loop learning results in the development of new norms and values that would otherwise be static within single-loop learning (Kim 1993). It is anticipated that double-loop learning will be featured throughout this research due to the importance of defining what learning outcomes are expected by the organisation. It is reasonable to accept that the majority, if not the entirety, of incident reports have a negative connotation, which ultimately affects the patient. Specifically, incident reporting is the method in which acute care facilities capture occurrences when clinical practices deviate from expected patient treatment protocols. Thus, double-loop learning enables the organisation to examine whether the norms and values which form the foundation of organisational learning from incident reporting systems are conducive to the organisation's strategies and actions (Argyris & Schon 1978). Particularly

important for an industry such as healthcare, a healthcare organisation must support a learning environment that facilitates continuous or incremental improvements. As explored by this research, ongoing education is achieved via systems such as the short cycle feedback loop. If single-loop learning enables organisational inquiry that facilitates correction of error, fostering improvement, then double-loop learning supports the organisation's ability to examine and modify the parameters that govern such learning practices (Argyris & Schon 1978). This is an imperative element of the organisation's strategy to achieve effectiveness and performance objectives.

Triple-loop learning, or deuterolearning (Argyris & Schon 1978) emphasises the structures that compose the organisation's systems of inquiry. Essentially, the organisation's "learning how to learn" capability is determined by these structures. Such structures can take the form of communication mechanisms, technology and procedures (Argyris & Schon 1978); all of which can either facilitate or inhibit the organisation's potential to learn and how to channel such learning into operational improvements. The short cycle feedback system within this research can facilitate triple-loop learning, evidenced by the system's potential to drive continuous improvement of individuals and the collective of individuals that form the organisation. Besides from individual-level learning, lessons that emerge from the short cycle feedback system can manifest into patient safety initiatives and programs that further enhance the learning capacity of the organisation. Quite simply, triple-loop learning maximises knowledge regarding how to convert inquiries into organisational learning. Within the context of this research, the mass collection of incidents from incident reporting systems can be transformed into learning

outcomes; an objective of this study being how effective the short cycle feedback system can achieve organisational learning. Additionally, this is to be measured by the acknowledgement of learning by the short cycle feedback recipient, which is to be documented by the feedback specialist.

CHAPTER III: METHOD

Study Aims and Research Questions

The primary research aim of this study was to ascertain the impact of short cycle feedback on organisational learning. This study explored whether short cycle feedback, provided by a Feedback Specialist, facilitated an improvement in one's clinical practices, resulting in the avoidance of repeated incidents and thus strengthening patient safety. Beyond this primary research aim were 3 distinct research propositions, in relation to "Can a short cycle incident reporting system":

- i) Improve incident reporting rates;
- ii) Decrease actual incidents; and,
- iii) Decrease the severity of incidents.

This study empirically investigated the proposition that a short cycle feedback intervention on routine clinical work would reduce the number of errors made, whilst also enhancing the confidence of frontline staff in their clinical aptitude (Hu, Herrick & Hodgins 2004). This study also investigated staffs' attitudes towards patient safety and feedback from incident reporting systems, via a pre-intervention and post-intervention questionnaire.

Incident reporting data from both study and controls wards were reviewed prior to the commencement of the study, to determine baseline data regarding incident reporting

behaviours. The study featured 5 consecutive monthly phases. A pre-intervention questionnaire was completed by participants, to establish perspectives on incident reporting culture. Thereafter, observed incidents were compared to reported incidents; the quantification of the former being achieved via a verbal query protocol. To facilitate the intervention, a feedback specialist was then introduced, who was responsible for providing formative feedback (within a 72 hour timeframe) to an identified staff member that had reported an incident during the intervention phase. A post-intervention questionnaire aimed to measure staff satisfaction with the intervention, particularly in relation to educational merit and practical use within the day-to-day patient-care setting.

Research Design

The research was an observational, longitudinal study that employed a non-equivalent control-group design. A study and control ward was used for comparative analysis between intervention and non-intervention effects.

The study was conducted in 5 consecutive phases, which were of 1 month duration each; thus, the study was conducted over a 5 month period. By the flip of a coin, 1 ward was designated as the 'study ward' leaving the other as the 'control ward'. The same data gathering protocols were used in both wards, but only the study ward received the phased intervention described in detail below. A number of dependent variables were tracked over various temporal phases (the independent variable). The intention was to isolate any effect by the intervention, from mere reporting regimes, and to track the stability (or lack thereof) of any effect.

As described in Jamtvedt et al. (2006) the clinical setting is an important factor in feedback and audit interventions. Thus, the criteria for the study and control wards were:

- i) in-patients only;
- ii) have a single medical and nursing head of department; and,
- iii) a primary treatment discipline (e.g. general medicine; general surgical).

The dependent variables are:

- i) Number of reported incidents (e.g. via the IIMS incident reporting system);
- ii) Number of observed incidents (e.g. observed incidents recorded from verbal query);
- iii) Rate of reporting (e.g. reported incidents as a proportion of observed incidents);
- iv) Severity of reported incidents (e.g. actual SAC ratings);
- v) Staff job satisfaction (e.g. derived from pre-intervention and post-intervention questionnaires);
- vi) Satisfaction with existing incident reporting system (e.g. IIMS); and
- vii) Satisfaction with short cycle formative feedback (e.g. derived from pre-intervention and post-intervention questionnaires).

The independent variables are:

- i) Time in the form of the 5 phases of the study; and,
- ii) Group membership.

The first 3 dependent variables were tracked through each phase of the study while the remaining dependent variables were only compared during the post-intervention phase of the study, due to the direct comparisons made between the pre-intervention questionnaire and post-intervention questionnaire.

A staff questionnaire administered before and after the feedback phase of this study sought to compare and substantiate whether staff perceived the utility of the incident reporting system (i.e. IIMS) was enhanced by the provision of feedback based upon the incident report they submitted. The questionnaire focused on staffs' satisfaction with all aspects of the feedback provided, an approach similarly undertaken in other studies (Yarris et al. 2009; Franklin et al. 2007). This includes usefulness, timeliness and mode of delivery.

Prior to the commencement of the study, a "pre-study" phase was undertaken, which focused on determining the average monthly level of incident reporting on both the study and control wards. Data for the period November 2011 to February 2012 (4 months) was retrospectively analysed via the Hospital's Incident Management System, which established baseline incident reporting data – this is explored further below.

A retrospective audit was considered in relation to whether identified incident reporting staff members received feedback in response to the incident they had submitted. However, this would not have explored the practical limitations when providing short-cycle feedback within a busy, healthcare environment. It was considered that the limitations and challenges

experienced in this study are applicable for similar interventions within a healthcare environment, which is valuable in the maximising the utility of future interventions. The feedback intervention within a 'live' environment was selected due to the benefit of demonstrating the 'real-life' challenges of implementing such an intervention in a healthcare environment. The longitudinal design demonstrated how the feedback intervention could influence staff perception regarding incident reporting behaviours.

These variables for each incident report were recorded throughout the duration of the study, in order to determine the effect of each phase on incident reporting behaviours.

During phase 1 staff in the study and control wards were asked to complete the pre-intervention questionnaire to ascertain staffs' satisfaction with the IIMS incident reporting system. The pre-intervention questionnaire featured a total of 91 questions, which were divided into sections pertaining to patient safety, incident learning, personal experience, incident reporting systems and feedback from incidents. A 5 point Likert scale was used as the basis for the response to each question, with the exception of 3 free-text questions, related to personal experiences of the participant, regarding a memorable incident. The questionnaire was treated confidentially, facilitated by the use of an alias that was unique to the personal details of the participant, governed by parameters set by the researcher. This alias would later be used for the post-intervention questionnaire, introduced in phase 5, which enabled a direct comparison at the individual level.

During phase 2 a verbal query procedure was introduced in the study and control wards. This procedure was in relation to the observation of any incidents during a participant's shift. A Clinical Support Officer and In-Charge Nurse supported this procedure by verbally querying each consenting participant prior to the conclusion of their shift and documenting their response on a standard verbal querying template, designed by the researcher. The observation of an incident did not substitute the formal reporting of the incident into IIMS, which enabled a calculation between observed incidents and reported incidents, in order to determine the presence and magnitude of incident underreporting. The verbal querying procedure continued subsequently in phases 3 and 4, which occurred concurrently with procedures unique to these phases.

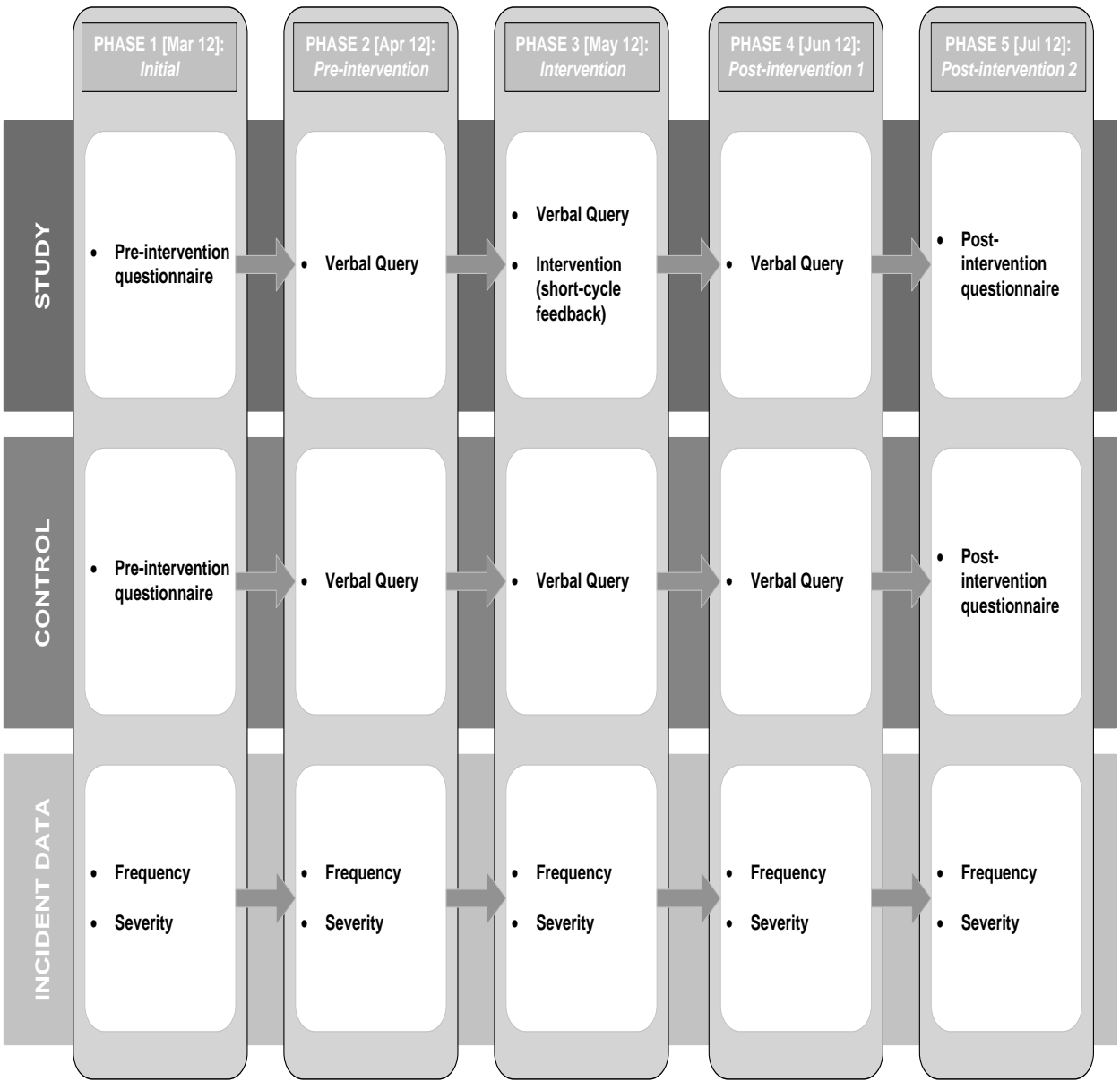
In phase 3 of the study the short cycle feedback intervention was introduced. Formative feedback was provided to the reporting staff member, from the study ward, following submission of an incident report into IIMS. It is noted that the reporting staff member must identify themselves within the submitted incident report; hence, all anonymous incident reports were considered outside the scope of this intervention and did not receive feedback from the feedback specialist. A Clinical Nurse Consultant was selected to undertake the role of the feedback specialist. In accordance with the Public Health System Nurses' and Midwives' [State] Award 2008 the Clinical Nurse Consultant must have a minimum professional experience of 5 years. This is consistent with similar feedback interventions facilitated by a clinical expert (Porte et al. 2007). The short cycle feedback intervention was administered to all participants on the study ward, regardless of their working shift, in order to prevent a roster bias. The timely

provision of short cycle feedback to the reporting staff member was governed by this self-imposed timeframe of 72 hours between submission of the incident report and the feedback being supplied. The feedback mechanism employed in this study aimed to provide feedback to the reporting staff member, via a feedback specialist; however, based upon the severity of the incident (i.e. actual SAC rating), further standard investigative processes (i.e. Root Cause Analysis, Reportable Incident Briefs) and feedback may have been initiated concurrently.

Phase 4 was highlighted by the removal of the short cycle feedback intervention from the study ward. The intervention's stability of effect was reviewed via the recording of incident reporting data. The verbal query of observed incidents remained in effect on both the study and control wards, as was the case for phases 2 and 3.

Phase 5 was the concluding phase of the study, which featured the cessation of the verbal query of observed incidents from both the study and control ward. A post-intervention questionnaire was introduced, which featured 19 questions pertaining to feedback from incidents and the short cycle feedback intervention, including staff satisfaction towards the feedback specialist and the utility of feedback provided. Responses were received throughout this monthly phase. A reminder / prompt was issued to all participating staff members in both the study and control wards to return their completed post-intervention questionnaire. Responses to the post intervention questionnaire dissipated after an additional fortnight beyond the conclusion of this monthly phase. The stability of effect, in relation to the intervention, was measured via the recording of incident reporting data.

Figure 1: Visual Summary of the Research Design



Participants

Recruitment Criteria

An invitation to participate was provided to all clinical and corporate staff from the study and control wards. The study and control wards were each a general specialty, in which acute patient care is provided on a 24-hour, 7-day a week rotational roster. The composition of clinical staff was largely from the nursing workforce, followed by allied health and medical disciplines. Considering that the number of staff on the study and control wards was consistent with similar general specialty wards within the study hospital and other hospitals within the Local Health District, it is argued that this affirms the generalisability of the study (SSWAHS 2010). A minimum sample size of 20 participants each, for the study ward and control ward, was sought for the study. This desired sample size was calculated based upon a population of 25 total staff members within the study ward, using a confidence level of 95% and a confidence interval of 10.

It was determined that the existing staff profiles of both wards would ensure suitable representativeness amongst the variety of professional disciplines that generally compose a hospital general ward. Furthermore, it was believed that the combination of clinical and corporate staff would afford valid, multi-faceted perspectives regarding incident reporting systems, which could be replicated in similar clinical settings.

Casual and agency staff were excluded from the scope of the research study. The unpredictable nature of casual and agency staff working a shift, typically in response to unplanned leave (i.e.

sick leave) made their inclusion in the study challenging and impractical. Additionally, as such staff are able to work in any ward within the Hospital, it was not feasible to seek each casual and agency staff member's consent to participate in the study, should they fulfil a shift within either the study or control ward.

Recruitment Method

A presentation was initially provided to the executive team of the study Hospital, in order to seek in-principle support, as well as confirm that there would be no disruption to patient care. Following receipt of the executive team's support, the same presentation was conducted with each Nursing Unit Manager and medical Head of Department on the study and control wards. The medical and nursing managers of each ward were shown that ethics approval had been received in relation to the study, as well as documentation that their staff would receive when invited to participate in the study. Support was received from the medical and nursing managers of both the study and control ward, following assurance that staff would not be disturbed in the provision of patient care.

A list of staff members from the study and control ward was produced via the Hospital's Human Resources Department. The researcher, guided by the Hospital's Director of Medical Services, added the relevant Visiting Medical Officers to either the study or control ward eligible participant list, based upon their identified scope of practice. It is noted that Hospital Assistants (Cleaners) and Wardspersons are typically rostered on a rotational basis through all wards of the Hospital; however, the respective participating staff members were rostered for the

majority of the study's phases, and continued to participate once they concluded their rostered period within the study and control ward, which coincided with the end of phase 4.

At the beginning of phase 1, in March 2012, all staff within the study and control wards received a:

- i) participant information sheet;
- ii) consent form; and
- iii) pre-intervention questionnaire.

These documents were attached to each staff member's fortnightly pay-slip.

The researcher offered to each Nursing Unit Manager and relevant Corporate Manager (i.e. Ward Clerks and Clinical Support Officers; Hospital Assistants (Cleaners) and Wardspersons) to meet with staff to further explain the nature of the study; this was in addition to an invitation within the participant information sheet, which encouraged staff members to direct any queries directly to the researcher. It is noted that the researcher's contact details were provided. The researcher was invited on a few occasions to meet with staff, for the purposes of explaining the study further, as well as promoting the merits of the study; and thus participation.

As anticipated, a challenge for the study was clinician engagement. This is consistent in similar studies highlighted in the literature review (Pronovost et al. 2003; Braithwaite et al. 2010). To ensure clinician engagement was maximised, this author personally spoke with each senior

doctor (Visiting Medical Officer) to explain the purpose of study, focusing on the education of medical staff and the benefits of feedback on patient safety. It was determined that it was beneficial to meet with each individual senior doctor, due to some doctors advising anecdotally that they would not have otherwise agreed to participate had it not been for the personal explanation by the researcher. However, it proved difficult to speak with each senior doctor from the study ward, due to the variability of their roster, which was determined by their patient load and commitments at other hospitals. In lieu of a face-to-face meeting, the aforementioned documentation was provided to the Hospital's Medical Administration Department, for dissemination to the outstanding senior doctors.

A follow-up, de-identified email was circulated approximately 2 weeks after the initial mail-out, to those staff members from the study and control wards that had a work email address.

Nursing Unit Managers published a hard-copy of the follow-up email on the staff noticeboard within each ward, to ensure staff members that did not have a work email address were not disadvantaged by not receiving follow-up correspondence. Additionally, the researcher met with staff on each ward, on an ad-hoc basis, at varying shifts, to encourage participation in the study and to answer any questions that staff members may have had.

Invited staff members had the option of either providing their signed consent form to the Nursing Unit Manager of their respective ward or by submitting the form in the staff-accessible, secure drop-box of the researcher, located within the General Administration department of the Hospital. For the ease of participants, the researcher's drop-box was visually highlighted, to

prevent any erroneous submissions to other staff members' drop-boxes. Upon receipt of each signed consent form, a spreadsheet was developed and updated by the researcher, which was cross-checked against the original staff list of both wards, produced by the Human Resources Department. This enabled 1 additional round of follow-up with outstanding staff members, approximately 3 weeks after initial invitations were distributed, to verify whether they had intentions of participating in the study, or if they declined.

By the end of phase 1, the number of consenting participants were determined; which was essential to identify the staff members that would participate in phase 2, prior to the commencement of this phase. It was accepted that any non-response by an outstanding staff member would be interpreted as a declination to participate in the study. This was particularly evident in the medical profession, as most Registrars and Junior Medical Officers failed to pick up their pay-slips by the conclusion of phase 1. It is noted that only 1 staff member (a nursing professional) from the study ward actively declared their declination, which was advised to their respective Nursing Unit Manager. The result of this recruitment method was:

Table 2: Number of Study Participants, by Profession

Profession	Ward	Number	Distributed	Participants
Administration	Study	2	2	2
	Control	2	2	1
	Combined	4	4	3
Allied Health	Study	9	9	9
	Control	7	7	5
	Combined	16	16	14
Medical	Study	16	9	1
	Control	11	11	3
	Combined	27	20	4
Nursing	Study	34	32	31
	Control	25	23	8
	Combined	59	55	39
Support / Hotel	Study	2	2	2
	Control	2	2	2
	Combined	4	4	4
Total	Study	63	54	45
	Control	47	45	19
	Combined	110	99	64

Context and Characteristics

Fairfield Hospital

The study was performed at Fairfield Hospital, a 220-bed major metropolitan hospital based in the South Western Sydney Local Health District. Fairfield Hospital is geographically located at Prairiewood, which is 35 kilometres south-west of the Sydney Central Business District. Fairfield Hospital was originally located at Fairfield when the hospital officially opened in 1956. In 1988, Fairfield Hospital moved to its current location. Fairfield Hospital services a number of Local Government Areas (LGAs) that feature a variety of culturally and linguistically diverse populations, totalling approximately 196,000 people. Additionally, in 2011, the Fairfield City LGA ranked as the fifth most socioeconomically disadvantaged population in NSW (Australian

Bureau of Statistics 2011). In the 2011-12 financial year, the Emergency Department had approximately 32,000 presentations and 14,000 overnight admissions. For the 2011-12 financial year the staffing profile of Fairfield Hospital was approximately 800 head count and 650 full time equivalents (FTE). Furthermore, the composition of the Hospital's staffing profile was:

Table 3: Proportion of Staff at Fairfield Hospital for the 2011-12 Financial Year

Profession	FTE	%
Administration	78.58	12
Allied Health	91.32	14
Medical	77.41	12
Nursing	330.07	51
Support / Hotel	72.82	11
Total	650.2	100

The study and control ward of the case hospital is the General Medical ward (Ward 1A) and General Surgical ward (Ward 2A), respectively. These wards have 30 beds each; however, 8 of the beds within the General Surgical ward are unfunded and are only utilised during high activity periods. Both wards have an identical management structure, in which there is a Nursing Unit Manager and a medical Head of Department. The latter role is undertaken by a Visiting Medical Officer, who has clinical duties in other hospitals within the South Western Sydney Local Health District.

The following table shows a summary of general patient demographics and staffing compositions for the study and controls wards, compared to the entire hospital:

Table 4: Summary of general patient demographics and staffing compositions for the Study and Control wards, compared to the entire Hospital, for the period 2011-12

Wards	General Medical Ward (Study Ward)	General Surgical Ward (Control Ward)	Fairfield Hospital (Case Hospital)
Avg. Length of Stay (Days)	6.02	7.29	4.56
Acute Separations			26,204
Beds	30	30	220
Average Occupancy			87.73%
Administration (avg. headcount)	2	2	92
Allied Health (avg. headcount)	9	7	114
Medical (avg. headcount)	16	11	90
Nursing (avg. headcount)	34	25	423
Support / Hotel (avg. headcount)	2	2	86
Total Staff (avg. headcount)	63	47	805

Study Ward

The Study Ward is a 30-bed General Medical ward, which is staffed by nursing, medical and allied health multidisciplinary teams. The General Medical ward features 8 telemetry units, which enable the admission of patients that present with chest pain and require cardiovascular monitoring. A breakdown of the types of patients, by principal Diagnosis Related Group (DRG), admitted into the Study Ward is featured in the below:

Table 5: Top ten (10) DRGs for the General Medical (Study) ward, for the period July 2011 – February 2012

AN DRG	Description	Separations
F74Z	Chest Pain	146
F73B	Syncope and Collapse W/O Catastrophic or Severe CC	55
E65B	Chronic Obstructive Airways Disease W/O Catastrophic CC	47
F76B	Arrhythmia, Cardiac Arrest & Conduction Disorders W/O Cat or Sev CC	43
B69B	TIA and Precerebral Occlusion W/O Catastrophic or Severe CC	38
D61Z	Dysequilibrium	34
F62B	Heart Failure and Shock W/O Catastrophic CC	34
E62A	Respiratory Infections/Inflammations W Catastrophic CC	32
E62B	Respiratory Infections/Inflammations W Severe or Moderate CC	26
F76A	Arrhythmia, Cardiac Arrest & Conduction Disorders W Cat or Sev CC	21

Control Ward

The Control Ward is a 30-bed General Surgical ward, which is staffed by nursing, medical and allied health multidisciplinary teams. As mentioned previously, 8-beds are considered unfunded and are typically utilised during peak demand periods, such as the winter season. These unfunded 8-beds were utilised for the majority of the 5 month study period, as this study coincided with majority of the winter season. The General Surgical ward is predominantly composed of respiratory patients and acute surgical patients. A breakdown of the types of patients, by principal Diagnosis Related Group (DRG), admitted into the Control Ward is featured in the below:

Table 6: Top ten (10) DRGs for the General Surgical (Control) ward, for the period July 2011 – February 2012

AN DRG	Description	Separations
E65B	Chronic Obstructive Airways Disease W/O Catastrophic CC	54
G70B	Other Digestive System Diagnoses W/O Catastrophic or Severe CC	33
E62B	Respiratory Infections/Inflammations W Severe or Moderate CC	31
G67B	Oesophagitis and Gastroenteritis W/O Cat/Sev CC	30
E62A	Respiratory Infections/Inflammations W Catastrophic CC	26
L63A	Kidney and Urinary Tract Infections W Catastrophic or Severe CC	22
F62B	Heart Failure and Shock W/O Catastrophic CC	21
J64B	Cellulitis W/O Catastrophic or Severe CC	19
L63B	Kidney and Urinary Tract Infections W/O Catastrophic or Severe CC	19
G66Z	Abdominal Pain or Mesenteric Adenitis	17

Baseline Incident Reporting Data

Collection

Incident reporting data was collected from IIMS, for the period November 2011 to February 2012, to establish baseline data for:

- i) incident type;
- ii) incident location;
- iii) incident date;
- iv) time of incident;
- v) time band;
- vi) principal incident type;
- vii) incident description;
- viii) initial SAC consequence;
- ix) initial SAC likelihood;

- x) initial SAC rating;
- xi) initial action taken;
- xii) incident prevention;
- xiii) notifier designation;
- xiv) notifier first name;
- xv) notifier last name;
- xvi) actual SAC consequence;
- xvii) actual SAC likelihood;
- xviii) actual SAC rating; and
- xix) incident recorded date.

It is noted that the Patient Safety Manager of the study Hospital is the primary person responsible for incident report governance. As such, the Patient Safety Manager provided retrospective data in accordance for the baseline incident reporting parameters. The provision of this data was continued on a daily basis, in relation to daily incident reports from the study ward and control ward, throughout all phases of the study. This was opposed to the researcher gaining temporary access to IIMS beyond standard areas of responsibility and as per the request of the Director of Clinical Governance for the South Western Sydney Local Health District.

Rationale

The incidents for both the study ward and control ward were reviewed retrospectively for the period November 2011 to February 2012 (a 4 month period). This retrospective review of baseline incident reporting data enabled the calculation of the average number of incidents per month, the types of incidents and the reporting behaviours of staff, including proportion of incidents reported anonymously. Additionally, the use of Severity Assessment Codes (SAC), both by the reporting staff member (initial SAC rating) and the relevant manager / supervisor (actual SAC rating), was measured, to determine the use of SAC ratings in order to identify the seriousness of reported incidents.

Phase 1: Pre-Intervention Questionnaire

The pre-intervention questionnaire was designed to explore the study participants' perspective on incident reporting culture within their workplace. Both the pre-intervention and (later) post-intervention questionnaire required the participant to identify themselves via a self-created alias, which enabled comparative analysis at an individual level, whilst also maintaining confidentiality of the participant. The direct comparison between the pre-intervention questionnaire and post-intervention questionnaire determined whether the satisfaction of participating staff members changed due to the short cycle feedback intervention. Participant information common to both questionnaires enabled segregation of results based upon whether the participant was from the study or control ward, as well as the participant's profession. The units of measure in both questionnaires were based on a 5-point Likert scale and were converted to a numerical value that supported the quantitative analysis.

The pre-intervention and post-intervention questionnaires are based upon a staff survey tool by Cooke, Dunscombe, and Lee (2007). Cooke et al. (2007) surveyed 125 frontline and support staff in relation to their ability to learn from incidents, respective of their personal experiences. The appearance of the pre-intervention and post-intervention questionnaire is akin to that featured in the study by Cooke et al. (2007) and consent was received directly from the primary author prior to use in this study.

It is noted that a semi-structured interview was considered; however, the principal researcher was employed at the study hospital, throughout the course of the study. Furthermore, the principal researcher's substantive position was of a senior Executive of the Hospital. To this end, and through consultation with the thesis Supervisors, it was considered that direct communication (particularly face-to-face) between the principal researcher and participants was to be avoided. The participants may have perceived any advice regarding the study, issued by the principal researcher, as a direction due to the principal researcher's authority; particularly for participants whom the principal researcher had direct management responsibility for. Alternative administrators of a potential interview were considered; however, resource limitations prevented suitable staff members being available.

Description

Throughout the course of the study, documentation provided to study participants were marked with a unique identifier to indicate whether the participant was from the study ward or

the control ward. The study material / documentation, including the pre-intervention questionnaire, was marked with either a star or a heart, to indicate the study ward or control ward, respectively.

Staff were advised, via their participant information sheet that the surveys would be treated confidentially and that no identifying information (e.g. name, position) would be required. The confidentiality of the questionnaires was imperative to retrieve honest responses; this approach being consistent within the literature (Mahajan 2010), as confidential surveys also facilitate a non-punitive and supportive environment that enhances staff acceptance (Farley et al. 2008).

The use of aliases was featured in the pre-intervention questionnaire (and later, post-intervention questionnaire) as a means to link responses of individual staff members whilst preserving their confidentiality. Section 1 of the both the pre-intervention and post-intervention questionnaires asked each participant to use the first 4 letters of their father's name and the first 4 letters of their favourite superhero as their unique alias. It is noted that this information, regarding how to create a unique alias, was featured at the beginning of both the pre-intervention and post-intervention questionnaire. The method in which an alias was created proved unique for all participants, as there were no 2 aliases the same. Additionally, since the participating staff member created their own alias based on their personal information and preference (i.e. father's name and favourite superhero, respectively) this enabled simple memory recall when the same alias was required 3 months later for the post-

intervention questionnaire. Asides from the entry of an alias, the participant was required to indicate their profession, by ticking a box linked to each available option: Medical, Nursing, Allied Health, Support / Hotel, Administration and Other. It is noted the provision of 'Other' as an option was for staff members that were not familiar with professional classification; however, this option was not selected by any participant.

Section 2 featured common incident reporting definitions that were used consistently throughout the study period. It was considered that the subjective interpretation of common incident reporting terminology, such as near-miss and adverse event, could create a bias that would skew the data. Therefore, in accordance with definitions adopted throughout this study, it was determined that the provision of incident reporting definitions would diminish any subjectivity within a participant's response.

The remaining sections (Sections 3 to 7) categorised the questions according to the nature and content of each individual question. Section 5 focused on the personal experience of the participant. The participant was asked what the average number of incidents was in a year that they experienced, either as a participant or observer. Furthermore, based on these incidents, the participant was asked how many of the incidents were reported, how many were near-missed and how many were investigated. Additionally, this section required participants to:

- i) describe a memorable incident that they have been involved in;
- ii) summarise what they had learnt from this incident; and
- iii) in their opinion, what did the organisation learn from this incident.

These free-text responses were later classified into themes and nodes, which allowed the researcher to perform an inter-rater reliability test (Upton & Cook 2006). The researcher's supervisor was recruited as the second rater. It is noted that the completion of the inter-rater reliability by the research and the researcher's supervisor was independent of one another, in order to avoid any bias.

An ordinal scale was used to measure the survey questions, with the exception of the 3 free-text questions within the pre-intervention questionnaire. The questionnaires used a 5-point Likert-scale, which categorised data based on qualitative differences: 'Strongly Disagree' (1), 'Disagree' (2), 'Neutral' (3), 'Agree' (4) and 'Strongly Agree' (5). A zero (0) value was given for staff members that selected 'No Opinion'. In relation to the pre-intervention questionnaire, questions 27, 53, and 84 had alternative nominal values, which were: 'Very Poor', 'Poor', 'Average', 'Good', 'Very Good'. Additionally, question 58 had alternative nominal values, which were: 'Very Negative', 'Negative', 'Neutral', 'Positive', 'Very Positive' and 'No Experience'; the only difference being that 'No Experience' had a numerical value of 0. Questions 59 to 68 also featured alternative nominal values, due to the phrasing of the questions. In this series of questions, the study participant is asked to rate the importance of each question with reference to why they would not report an incident. The nominal values used were followed a similar ascending pattern as described above: 'Extremely' (1), 'Very Important' (2), 'Quite Important' (3), 'Somewhat' (4), 'Slightly' (5) and 'Not At All' (6). The absence of a 'No Opinion' option was purposeful to encourage study participants to rate the importance of reasons underreporting

may affect incident reporting practice. Blank and 'No Opinion' responses were not scored in both the pre-intervention questionnaire and post-intervention questionnaire. The pre-intervention and post-intervention questionnaires were administered in paper-based form, which are appended to this dissertation at Appendix 6 and 7, respectively.

Distribution

The pre-intervention survey was provided to each individual eligible staff member in the first phase of the study, in addition to the participant information sheet and consent form. Pre-intervention questionnaires were attached to all staff members' fortnightly pay-slips. It is noted that nursing and non-nursing staff have alternating fortnightly pay periods; for example: non-nursing staff members would receive their pay slip during week 1 and nursing staff members would receive their pay-slip during week 2. The exception to this method of distribution regarding the pre-intervention questionnaires was the senior medical staff, including Visiting Medical Officers. This is due to senior medical staff do not often collect their pay slips and Visiting Medical Officers bill the Hospital for their services; hence, they do not receive a pay slip. Additionally, it was believed that participation rates amongst senior medical staff and Visiting Medical Officers would increase if individual discussions took place. Furthermore, support was sought from medical Heads of Department (majority being Visiting Medical Officers) to encourage junior medical staff within their Departments to participate in the study. It is noted that all Allied Health staff were hand-delivered the study documentation (i.e. participation information sheet, consent form and pre-intervention questionnaire) by the researcher. This was at the request of the relevant Allied Health Department Managers, so that

clarification regarding the study could be immediately. This distribution method afforded the researcher the opportunity to encourage participation and answer any queries.

Collection

Each staff member that received a pre-intervention questionnaire, and a consent form to participate in the study, were asked to return the completed documentation to either the researcher directly, via drop-box or to their direct line manager (typically the Nursing Unit Manager of the ward), which was later collected by the researcher. A follow-up email was provided to the staff that had email access, a fortnight after the pre-intervention questionnaire was distributed, and a hard-copy was displayed on the staff notice board in the study and control wards, which captured staff that did not have email access. It is noted that in order to ensure confidentiality was maintained the distribution list of the email was redacted. Upon receipt of either the consent form or pre-intervention questionnaire a self-created spreadsheet was updated to record consenting study participants.

Response Rate

The overall response rate for the pre-intervention questionnaire was 36.36% (36 / 99). Furthermore, the response rate from the study ward and control ward was 43.64% (24 / 55) and 26.67% (12 / 45), respectively. The highest number of participants was nursing staff ($N = 14$). It is noted that the questionnaire was distributed with the participant consent form. Hence, there were participants that had completed the participant consent form but had not completed the questionnaire. For example, there were 36 participants that had completed the

pre-intervention questionnaire out of a total of 64 consenting participants; hence, the response rate to the survey was 56.25%.

A summary of participants, by profession, is indicated in the table below:

Table 7: Pre-intervention Questionnaire Response Rate, by Profession

Profession	Ward	Number	Distributed	Participants
Administration	Study	2	2	2
	Control	2	2	1
	Combined	4	4	3
Allied Health	Study	9	9	7
	Control	7	7	4
	Combined	16	16	11
Medical	Study	16	9	1
	Control	11	11	3
	Combined	27	20	4
Nursing	Study	34	32	12
	Control	25	23	2
	Combined	59	55	14
Support / Hotel	Study	2	2	2
	Control	2	2	2
	Combined	4	4	4
Total	Study	63	54	24
	Control	47	45	12
	Combined	110	99	36

Phase 2 – 4: Verbal Query of Observed Incidents

The measurement between reported incidents and observed (unreported) incidents was measured to quantify the magnitude of underreporting within the study and control ward. It is acknowledged that this was a departure from typical practice of both wards, which can be

considered an intervention in itself; however, no follow-up was undertaken to confirm if staff members reported any incidents they may have observed. The number of incidents observed was quantified via an incident observation document that was completed by staff following the completion of their shift. In order to mitigate 'double-counting' of observed incidents (i.e. 2 staff members that observed the same incident) the time and nature of the incident was recorded on the incident observation document, which was reviewed by the principal researcher to determine whether 'double-counting' was present.

The disparity between the number of incidents reported and incidents observed was measured over phases 2 to 4 (3 month period) of the study. As described in the literature (Mahajan 2010) the presence of short cycle feedback to the reporting staff member may increase the utility of incident reporting systems; potentially resulting in an inflated number of incidents reported, which could suggest a sudden rise in adverse events and near misses. Nonetheless, when incidents reported were compared to the number of incidents observed, the actual number of incidents was then deduced.

Implementation

The study encompassed all shifts on the study and control wards, to avoid a roster bias. The verbal query of observed incidents, which was recorded by the Clinical Support Officer during business hours, was assigned to in-charge nursing staff for evening shifts. Additionally, the feedback provided by the Clinical Nurse Consultant to evening shift staff was conducted by

face-to-face communication when the relevant nursing staff were rostered on shifts that coincided with business hours.

The verbal query form sought the following information from each participant:

- i) date and time the verbal query was asked;
- ii) the number of incidents observed during the course of the participant's shift;
- iii) a brief description of the incident; and
- iv) the profession of the participant.

The brief description was used to identify whether more than 1 staff member observed the same incident; thus, this would inaccurately increase the number of observed incidents. If the participant refused a verbal query, the staff member assisting in the verbal query process was encouraged to seek a reason why the participating staff member declined. It is noted that there were no staff members that refused to answer a verbal query.

Clinical Support Officers and In-Charge Nurses

In order to establish the presence and extent of underreporting in the study and control wards a verbal querying process was undertaken. The Clinical Support Officers of the study and control wards were asked to assist in the verbal querying process, following consultation with the Nursing Unit Managers of these wards. In accordance with their normal business hours work pattern, Clinical Support Officers asked all staff members (regardless of profession) within their respective ward whether they observed any incidents. The relevant Clinical Support

Officer was advised of the 1 staff member that refused to participate in the study to ensure that the verbal querying of observed incidents was not asked. Additionally, the Clinical Support Officer and Nursing Unit Manager from the control ward were provided with a list of staff that had consented to participate in the study, as there had been a lower response rate compared to the study ward. As nursing staff members were the largest staffing group in both the study and control ward, a list of consenting nursing staff members from the latter was particularly required, as there had been a response rate of 8 out of 23 potential participants, compared to the study ward's response rate of 31 out of 33 potential participants. In addition to the Clinical Support Officers, who were able to only facilitate the verbal querying process during business hours (8:30 am – 5:00 pm), Mondays to Fridays, the Nurses in-charge of the afternoon shift (2:30 pm – 11:00 pm) and evening shift (11:00 pm – 7:00 am) were also asked to assist. Whilst the Nursing Unit Manager sought the support of the Nurses in-charge, the researcher met with these staff members to explain the correct procedure regarding verbal querying was understood.

The Clinical Support Officers and Nurses in-charge were each provided with a one-page instruction document regarding the verbal querying process. A concern raised by Nursing Unit Managers was the disruption that the verbal querying process could cause staff members as they undertake clinical tasks. Therefore, it was emphasised in the instruction document that no staff member was to be approached if they were performing a clinical task. Additionally, the assisting staff members and Nursing Unit Manager of each Ward were provided with a list of participants, per the signed consent form. As such, instructions were issued for the staff

members assisting with the verbal query to avoid approaching non-participants. Verbal queries were asked of staff members towards the end of their shift. The Clinical Support Officers and Nurses in-charge were verbally encouraged to seek verbal queries during the last 90 minutes of the participant's shift. This timeframe was nominated in consultation with Nursing Unit Managers, particularly to allow for the time spent towards the end of a staff member's shift on clinical handover to staff on the next shift. To facilitate the verbal querying process, standard forms were provided to the Clinical Support Officers and Nurses in-charge for them to complete at each verbal query. These completed forms would then be placed into a drop-box located at the nurses' station of the study and control ward. The drop-box was marked with signage, which showed that it was the drop-box for verbal query forms as part of the study. Additionally, to ensure the forms were secure, the drop-box was securely locked with a padlock and the researcher was the only person that had the key. The researcher would then regularly collect these completed verbal query forms and enter this data into a spreadsheet.

As the verbal querying process occurred for 3 consecutive months, and simultaneously with the short cycle feedback intervention for 1 month, the researcher regularly met on an informal basis with the Clinical Support Officers, Nurses in-charge and Nursing Unit Managers throughout the verbal query phases of the study (April 2012 to June 2012). The researcher aimed to provide any support to the staff involved in the verbal querying process, including regularly supply of verbal querying forms.

During the month of June, the Clinical Support Officer of the study ward went on 2 weeks annual leave. The Ward Clerk within the study ward provided relief support to the Clinical Support Officer's role, and as such, the verbal querying responsibilities. It is noted that the Ward Clerk received the one-page instruction document regarding the verbal querying process, as initially provided to the Clinical Support Officers and in-charge nursing staff at the beginning of phase 2. Nonetheless, the number of verbal queries decreased compared to the 2 previous months. This procedural issue is further discussed in the results chapter of this dissertation.

Phase 3: Short Cycle Feedback Intervention (in Study Ward)

In order to determine whether feedback was provided within the study's definition of short cycle (i.e. within 72 hours of when the incident was reported) the time interval between when the incident was reported into IIMS and when the feedback specialist provided feedback was measured. Additionally, in instances when the short cycle feedback period was not achieved the feedback specialist documented reasons why this did not occur. During the provision of short cycle feedback, the feedback specialist was required to complete a record of feedback provided. This documented record of feedback provided included:

- i) IIMS ID;
- ii) incident date;
- iii) incident time;
- iv) principal incident type;
- v) notifier designation;
- vi) notifier first name;

- vii) notifier last name;
- viii) incident recorded date;
- ix) feedback date;
- x) feedback time;
- xi) feedback transmission; and
- xii) details of feedback.

The 'details of feedback' was a free-text field, which allowed the feedback specialist to indicate whether the reporting staff member believed the feedback provided had educational value in relation to day-to-day patient care tasks, should they volunteer this information.

The short cycle feedback intervention was the primary intervention phase of the study, in which staff members within the study ward would receive educational and formative feedback within a 72 hour period, from when they reported an incident into IIMS. The caveat being that the reporting staff member must identify themselves in the report. It was determined that it would be logistically difficult to provide generic feedback from anonymous incident reports to all study ward staff members and measure the effectiveness of this feedback in accordance with the parameters measured during this phase of the study.

Prior to the commencement of the short cycle feedback intervention phase it was understood that IIMS allowed staff members from other areas to enter an incident and assign it to the study ward. An example of such an incident was if a patient from the study ward is transferred

to another ward (in the study Hospital) and the standard clinical handover procedure is not followed. The receiving ward would be able to enter an incident into IIMS and assign it to the study ward, for appropriate management. It was determined that if any incidents of this nature were received during this phase of the study then no feedback would be provided as the reporting staff member is likely to be from a ward other than the study ward; hence, this circumstance would be beyond the scope of the study. Furthermore, such a reporting staff member would not have completed a consent form to participate in this study. However, it is noted that no incidents of this nature were reported in IIMS during this phase. The verbal query process continued throughout this phase.

Implementation

Due to the restrictions regarding access to incident reports from the IMMS database, the researcher was required to send de-identified incident reports to the feedback specialist. Automated distribution of incident reports to the feedback specialist was not possible due to the limited capabilities of IIMS. Additionally, to ensure continued clinical governance, the Nursing Unit Manager requested that feedback provided by the feedback specialist was advised to her, to ensure consistency of clinical practices within the study ward. Any standard methods of feedback provided by the Nursing Unit Manager continued during this phase of the study, as no interruption to regular clinical practices was a condition of ethics approval. Additionally, the Nursing Unit Manager confirmed that discussions normally take place with the reporting staff member in order to clarify incident details, so the Nursing Unit Manager can implement appropriate remedial action, if required. The Nursing Unit Manager noted that there was no

specific timeframe in which she liaised with a self-identified reporting staff member to clarify incident details; furthermore, it was advised that prompt clarification regarding an incident was dependent on her availability and the reporting staff member.

As per communiqués to study participants in previous phases, an email was exclusively provided to staff members of the study ward in preparation for the short cycle feedback intervention phase (Appendix 7). This email (provided both electronically and in hard-copy) introduced the feedback specialist and provided details on what staff members can expect if they reported an incident in IIMS during this phase.

Standard feedback form was provided to the feedback specialist, to enable standardised recording of information regarding the delivery of formative feedback to reporting staff members from the study ward. The feedback specialist provided the completed feedback forms to the researcher for data entry into a spreadsheet.

Feedback Specialist

Selection of the feedback specialist was conducted with guidance from the Director of Nursing and Midwifery Services of the study Hospital. It was important that the feedback specialist is not in a position of authority over the staff members on the study ward, as staff perception of the feedback provided may be interpreted as punitive. The feedback specialist's substantive position was largely based within a community health setting and not within the study or control ward. Furthermore, whilst the feedback specialist was considered a senior nursing staff

member, this was a reflection of the level of clinical expertise, rather than any managerial responsibility. To ensure the feedback provided was practical and clinically meaningful, the feedback specialist was a senior nurse with at least 5 years experience and involved in the ongoing education of clinical staff.

Phase 5: Post-Intervention Questionnaire

The post-intervention questionnaire was sent to staff 1 month following the conclusion of the short cycle feedback intervention phase. The post-intervention questionnaire was not immediately provided to staff following the conclusion of the short cycle feedback intervention phase in order to mitigate a 'halo effect', where participants may have provided exaggerated responses due to the immediacy between the intervention and post-intervention questionnaire phases of the study. Additionally, the timing regarding the provision of the post-intervention staff survey was determined by the principal investigator and supervisor, on the basis that memory retention may be compromised if the staff survey is administered beyond a 1 month period of the relevant phase (intervention phase). Incidents reported in IIMS continued to be provided to the researcher. These incident reports were reviewed to determine any stability of effect from the study, particularly the short cycle feedback intervention.

Description

The post-intervention questionnaire had 18 questions (in contrast to the pre-intervention questionnaire which featured 91 questions), which focused on satisfaction regarding the short

cycle feedback intervention, utility of the feedback received and whether the participant personally observed improvements in patient safety. Feedback was measured to determine if reported incidents were reduced due to the learning and development aspects of the short cycle feedback intervention. Data specific to the post intervention staff survey was used to identify the acceptance of the intervention and staffs' belief on the effect the intervention had on patient safety.

Distribution

The post-intervention questionnaire was provided to staff members a month after the conclusion of the intervention phase. As per the pre-intervention questionnaires, the distribution of post-intervention questionnaires was primarily via pay-slips, with a few being hand-delivered to Allied Health staff. Informal feedback from staff members was that the number of question in the pre-intervention questionnaire was "excessive" and proved difficult for staff to complete in a timely fashion during their shift. Furthermore, staff anecdotally advised that they would only be able to complete the questionnaire during either their 20-minute tea break or 30-minute meal break; hence, they would not be completing the questionnaire in their own time.

Collection

A follow-up reminder was provided to staff, a fortnight following the initial distribution of the post-intervention questionnaire, in addition to the researcher informally meeting with staff on both wards to confirm whether participants have either received or completed the post-

intervention questionnaire. Similarly to the pre-intervention questionnaire, responses were accepted 2 weeks after the conclusion of phase 5; hence, a 6 week time period was allowed for responses to be returned. Thereafter, responses dissipated and no further follow-up reminders were provided.

Response Rate

The overall response rate for the post-intervention questionnaire was 38.38% (38 / 99).

Furthermore, the response rate from the study ward and control ward was 56.36% (31 / 55) and 15.55% (7 / 45), respectively. The highest number of participants was nursing staff ($N = 24$).

A summary of participants, by profession, is indicated in the table below:

Table 8: Post-intervention Questionnaire Response Rate, by Profession

Profession	Ward	Number	Distributed	Participants
Administration	Study	2	2	2
	Control	2	2	0
	Combined	4	4	2
Allied Health	Study	9	9	4
	Control	7	7	3
	Combined	16	16	7
Medical	Study	16	9	1
	Control	11	11	0
	Combined	27	20	1
Nursing	Study	34	33	24
	Control	25	23	2
	Combined	59	55	26
Support / Hotel	Study	2	2	1
	Control	2	2	2
	Combined	4	4	3
Blank	Study	0	0	1
	Control	0	0	0
	Combined	0	0	1
Total	Study	63	55	31
	Control	47	45	7
	Combined	110	99	38

Analysis of Questionnaires

Comparison of Pre- and Post- Intervention Questionnaires from Study Ward

Responses in the form of nominal values for both questionnaires were tabulated in a spreadsheet. These nominal values were converted to numerical values, to allow for further analysis. Averages for each response were calculated, as well as the percentage of responses according to each possible nominal response. Nil responses were manually deleted from the spreadsheet, in order to be excluded from aggregated calculations.

Feedback Intervention

There were 2 questions, unique to the post-intervention questionnaire, which specifically sought the participant's opinion regarding the feedback specialist. These questions were made available to participants from the control ward, despite that the feedback specialist intervention was not featured within this ward. The 2 questions focused on the participant's "satisfaction" regarding the "availability" of the feedback specialist, and the "overall experience" with "learning from feedback" from the feedback specialist. It is noted that the former question allowed participants to select a "no opinion" response; however, the latter question did not feature a "no opinion" response, which was a deliberate strategy employed by the researcher in order to force a measured response. Despite this, there were 4 participants that did not provide a response, which was considered a "nil response" and was omitted from the aggregated data.

Comparison of Pre- and Post- Intervention Questionnaires from Control ward

Participant data from the control ward, in relation to both questionnaires, were entered into the same spreadsheet as per the study ward. This data recording method is listed in the previous section.

Comparison of Pre- and Post- Intervention Questionnaires between Study and Control Wards

Common Questions

There were 7 questions that were featured in both the pre-intervention and post-intervention questionnaires. These common questions pertained exclusively to feedback and were featured

under this section heading in both questionnaires accordingly. A comparison was made between an individual participant's responses to these common questions, per the participant alias used in both questionnaires. Of the 15 participants that completed these common questions on either questionnaire, there were 6 participants that had finished both. Furthermore, there were 3 participants each from the study ward and the control ward. A spreadsheet was used to tabulate these results and nominal responses were converted to the respective numerical value. Variances between the pre-intervention and post-intervention numerical value was calculated, to determine whether there was a change in an individual's response. It was determined that the participants from the study ward had a positive average improvement of 1.5 across all responses to the 7 common questions. This calculation was based on a conversion of the participant's response. The 5-point Likert scale used was converted from a nominal score to a numerical score, to which averages were calculated and compared. Conversely, there was a fractional positive average improvement of 0.2 in relation to the participants from the control ward.

Responses by Profession

Asides from the unique alias that each participant self-generated the individual was required to indicate their profession. This participant information was recorded in a spreadsheet. Nursing staff participants improved in the post-intervention questionnaire, compared to the responsiveness to the pre-intervention questionnaire. Anecdotally, nursing staff verbally advised the researcher that the pre-intervention questionnaire was burdensome, due to the number of questions. In contrast, there was a decrease of Allied Health staff responses from

the pre-intervention questionnaire to the post-intervention questionnaire ($N = 4$). The responses by profession is summarised in the table below:

Table 9: Comparison of Response Rate, by Profession, between the Pre-Intervention and Post-Intervention Questionnaires

Profession	Ward	Pre	Post	Variance
Administration	Study	2	2	0
	Control	1	0	-1
	Combined	3	2	-1
Allied Health	Study	7	4	-3
	Control	4	3	-1
	Combined	11	7	-4
Medical	Study	1	1	0
	Control	3	0	-3
	Combined	4	1	-3
Nursing	Study	12	22	10
	Control	2	2	0
	Combined	14	24	10
Support / Hotel	Study	2	1	-1
	Control	2	2	0
	Combined	4	3	-1
Blank	Study	0	1	1
	Control	0	0	0
	Combined	0	1	1
Total	Study	24	31	7
	Control	12	7	-5
	Combined	36	38	2

CHAPTER IV: RESULTS

During the study period, a total of 110 staff members from the study ward and the control ward were identified as eligible to participate. The criteria being that these staff members had to be employees of Fairfield Hospital that primarily worked in 1 of these wards. It is acknowledged that pre-questionnaires were not distributed to all eligible staff ($N = 10$) due to medical staff semester rotations or unavailability (i.e. maternity leave); despite several attempts to contact individual staff members directly. Additionally, only 1 staff member (from the study ward) declined to participate in the study. Of the staff members that received questionnaires, there was a response rate of 36% (36 / 100) and 38% (36 / 100) for the pre-questionnaire and post-questionnaire, respectively.

The representativeness of staff that participated in the questionnaires, in comparison to the staff that were eligible, is shown in the table below:

Table 10: Summary of staff representativeness that responded to the questionnaires

Category	Study Ward			Control Ward			Overall		
	Eligible	Pre-Q	Post-Q	Eligible	Pre-Q	Post-Q	Eligible	Pre-Q	Post-Q
Admin	2	2	2	2	1	0	4	3	2
A/Health	9	7	4	7	4	3	16	11	7
Medical	9	1	1	11	3	0	20	4	1
Nursing	33	12	22	23	2	2	56	14	24
Sup./Hot.*	2	2	1	2	2	2	4	4	3
Blank	0	0	1	0	0	0	0	0	1
Total	55	24	31	45	12	7	100	36	38

* Sup./Hot. = Support / Hotel staff

To further demonstrate staff representativeness the following table shows the study participants that were eligible and completed either of the questionnaires, in comparison to the whole of Hospital:

Table 11: Summary of staff representativeness that responded to the questionnaires, compared to the whole of Hospital

Category	Hospital (n)	Hospital (%)	Overall – Eligible (%)	Overall – Pre-Q (%)	Overall – Post-Q (%)
Admin	93	18%	4%	75%	50%
A/Health	94	48%	16%	69%	44%
Medical	161	11%	20%	15%	4%
Nursing	421	12%	56%	24%	41%
Sup./Hot*	106	11%	4%	100%	75%
Total	875	100%	100%	33%	35%

* Sup./Hot. = Support / Hotel staff

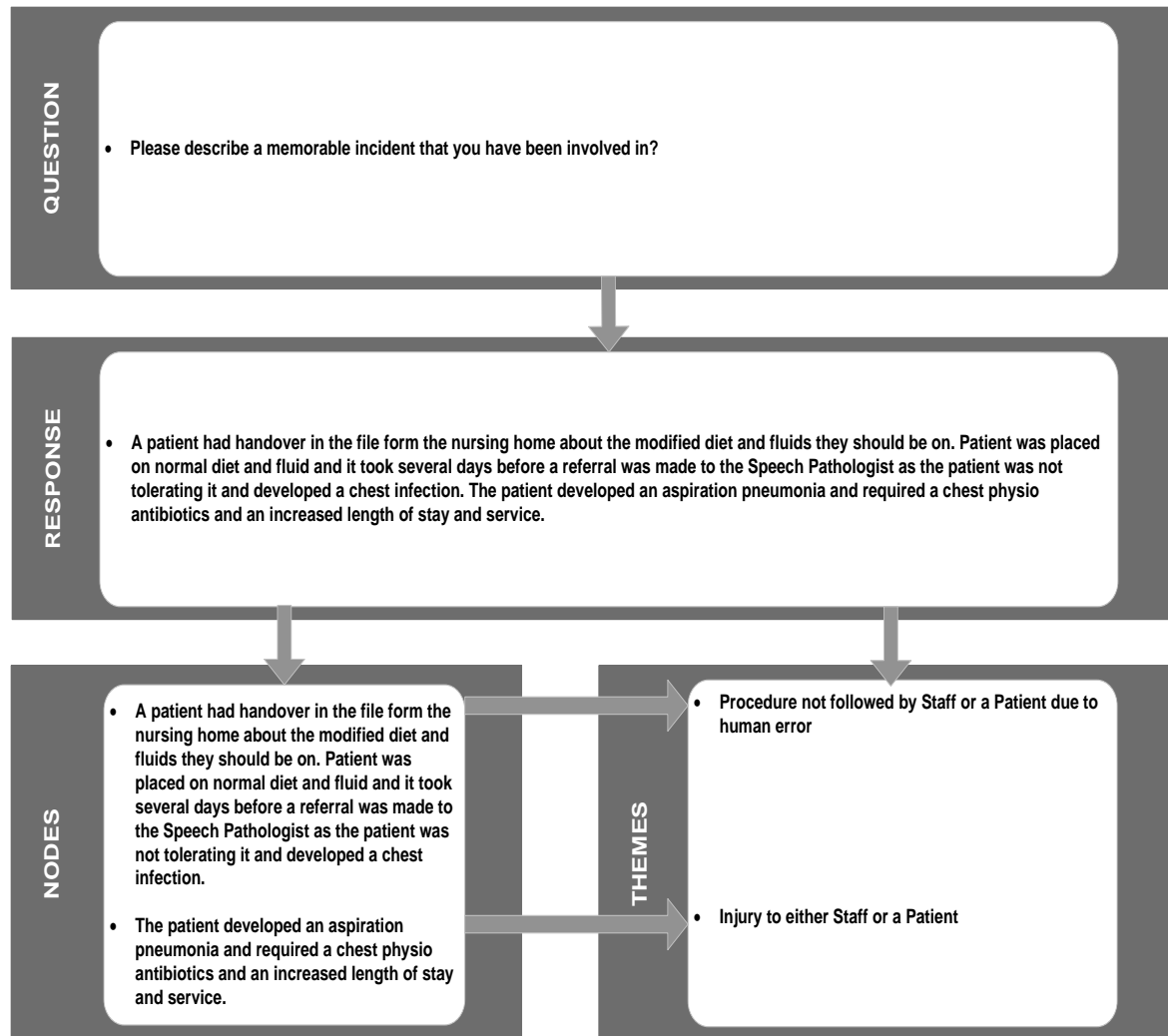
It is noted that Table 11 is based on head count of full-time, part-time and casual staff. In relation to medical staff, 69 Visiting Medical Officers are included in the total count of medical staff, as they are eligible to participate in the study. Ward Orderlies are normally grouped within the Allied Health staff category of the staff profile reports. However, in accordance with this study's definition of Allied Health staff, 20 Ward Orderlies were moved from the Allied Health staff category to the Support / Hotel staff category.

In the pre-questionnaire, questions 69, 70 and 71 were 3 free-text questions that related to learning experiences from a memorable incident. Responses were reviewed to identify relevant nodes and themes, which were then submitted to an independent rater to undertake an inter-

rater reliability test, as a means to establish a thematic analysis of study participants' free-text responses.

The thematic analysis contributes to the contextualisation and interpretation of the study participants' responses. Additionally, the inter-rater reliability test acts as a filter to remove responses that may not be relevant to the question asked. As such, each response was reviewed and separated into unique nodes, which featured key words or phrases that captured the overall context of the response. Thereafter, individual themes were created with respect to the established nodes; however, each node must only relate to a single specific theme (i.e. must not overlap with several themes).

Figure 2: Illustrative Example of Nodes and Themes



Nodes and themes were identified based on the free-text responses from the following 3 questions:

- i) Please describe a memorable incident you have been involved in?
- ii) Please summarise what you learned from this incident?
- iii) In your opinion, what do you think the organisation learned from this incident?

157 nodes were identified across the 3 questions. There were groups of 10 individual themes assigned to each question, resulting in 30 themes overall. Following completion of the inter-rater reliability test by the researcher, the nodes and themes were submitted to an independent rater to complete. Essentially, the independent rater was coding independently, as they were unaware of what nodes were matched to which themes by the researcher. Thereafter, there was an overall match of 47% between the researcher's and the independent rater's node-theme matches. This is considered unreliable, as a match of greater than 80% is considered to be a reliable inter-rated reliability test (McHugh 2012). Based on feedback from the independent rater, it was deemed that some nodes were too separated, which diminished the context. It was also determined that certain themes were ambiguous and thus multiple themes could be applied to a single node. Hence, the merging of similar themes was required in order to eliminate any ambiguity. For example, 'Procedure not followed' and 'Staff error' were deemed similar and were therefore merged in the revised inter-rater reliability test. Additionally, nodes that were left blank or irrelevant to the question asked would be removed.

A second attempt at the inter-rater reliability test was conducted, with a new independent rater (as the original independent rater had already seen the nodes, which would create a bias if they were to attempt the inter-rater reliability test for a second time). Based on the feedback from the original independent rater, the nodes and themes were revised, as shown in the following table:

Table 12: Summary of the number of nodes and themes used in the original and revised inter-rater reliability tests

	Q69	Q70	Q71	Overall
Original Nodes	61	51	45	157
Revised Nodes	32	33	22	87
Original Themes	10	10	10	30
Revised Themes	7	6	4	17

The number of nodes and themes reduced from the original and revised inter-rater reliability test were 70 (55%) and 13 (57%) respectively. As a result, an overall match of 84% was achieved between the researcher's and independent rater's node-theme matches, for the revised inter-rater reliability test. These results, compared to the results from the original inter-rater reliability test are detailed in the following table:

Table 13: Summary of results for the original and revised inter-rater reliability tests

	Agree (n)	Agree (%)	Disagree (n)	Disagree (%)	Overall (n)
Q69: Original	21	48%	23	52%	44
Q69: Revised	27	84%	5	16%	32
Q70: Original	17	52%	16	48%	33
Q70: Revised	28	85%	5	15%	33
Q71: Original	7	37%	12	63%	19
Q71: Revised	18	82%	4	18%	22

Question 69 asked study participants to describe a memorable incident in which they were involved. The purpose of this question was to determine the types of incidents from which staff learned during an incident report. The most common theme that featured in the 32 nodes was 'Procedure not followed by Staff or a Patient due to human error', which represented 9 out of 32 participants.

Table 14: Frequency of themes selected for the nodes in Question 69 (Please describe a memorable incident you have been involved in?)

Theme	Nodes	%
Procedure not followed by Staff or a Patient due to human error	9	28%
Injury to either Staff or a Patient	8	25%
Aggressive behaviour by either Staff or a Patient	6	19%
Staff dissatisfaction from incident reporting	3	9%
Lack of training / education	3	9%
Lack of incident reporting	2	6%
Lack of equipment	1	3%
Total	32	100%

Furthermore, the second most common theme was 'Injury to either Staff or a Patient', which represented 8 out of 32 participants. This would suggest that memorable incidents are commonly associated with negative outcomes, such as human error or injury.

Question 70 focused on what study participants learned from the memorable incident they described.

Table 15: Frequency of themes selected for the nodes in Question 70 (Please summarise what you learned from this incident?)

Theme	Nodes	%
Value of procedure	11	33%
Value of incident reporting	6	18%
Procedure requires review / improvement	6	18%
Staff dissatisfaction from incident reporting	5	15%
Requirement for training / education	4	12%
Nothing	1	3%
Total	33	100%

The purpose of this question was to identify the types of lessons that staff reported learning through incidents. The most common theme that featured in the 33 nodes was 'Value of procedure', which represented 11 out of 33 participants.

Question 71 sought the study participants' opinion on what the organisation learned from the incident they described.

Table 16: Frequency of themes selected for the nodes in Question 71 (In your opinion, what do you think the organisation learned from this incident?)

Theme	Nodes	%
Improve awareness / training / education	12	55%
Feedback / consultation re: incident reporting requires improvement	6	27%
Enhance resources (human or financial)	3	14%
Nothing	1	5%
Total	22	100%

The purpose of this question was to identify staff members' perception of lessons embedded into organisational practices, derived from incident reports. The most common theme that featured in the 22 nodes was 'Improve awareness / training / education', which represented 12 out of 22 participants.

The most common themes featured in response to all 3 questions all shared a focus on procedure and human error. One possible explanation may be that the incident was made memorable due to a procedure not being followed (due to human error), which may have resulted or contributed to an injury sustained by a staff member or a patient. It is believed that the staff participants personally gained a better understanding or appreciation on the value of

the procedure, which majority of participants believed that the organisation could benefit from improving education, in relation to the relevant procedure. The results of the inter-rater reliability test suggests an adverse event, documented via incident reporting processes, can be converted into a practical learning opportunity for both the individual and the organisation as a whole, which represents the fundamental theoretical principal of this research.

There were 7 questions that were identical in the pre-intervention questionnaire and post-intervention questionnaire, which focused on each participant's opinion regarding feedback from incidents. Based on the aliases used by participants, 7 or 8 participants were identified that answered the 7 identical questions in both questionnaires, which enabled direct comparisons of each individual participant's opinion between the pre-questionnaire and post-questionnaire. A summary of these results, which featured direct comparisons of individual participants that answered the same question in each questionnaire, is as follows:

Table 17: Summary of average results for pre-intervention questionnaire and post-intervention questionnaire, for common questions

Question	Avg. Pre-Q (num.)			Avg. Post-Q (num.)			Participants surveyed (n)		
	Study	Control	Overall	Study	Control	Overall	Study	Control	Overall
Feedback is provided to me from an incident that I have submitted as part of my daily work tasks	2.0	2.8	2.4	3.5	3.0	3.3	3	4	7
I am satisfied with the feedback provided to me from an incident I have reported	2.5	3.3	2.9	3.8	3.3	3.5	4	3	7
I am satisfied with the quantity of feedback I receive	2.5	2.8	2.6	3.8	3.0	3.4	4	4	8
I am satisfied with the quality of feedback I receive	2.5	3.0	2.8	3.8	3.0	3.4	4	4	8
I am satisfied with the timeliness of feedback I receive	2.0	3.0	2.5	4.0	3.0	3.5	3	4	7
The feedback provided to me improves my awareness about patient safety	3.0	3.0	3.0	4.0	3.7	3.8	4	3	7
I believe the feedback I receive improves my job performance and / or skills	3.3	3.0	3.1	3.3	3.3	3.3	4	3	7

There was an improvement in the average numerical scores of 2.3 to 3.6 in from the pre-intervention questionnaire to the post-intervention questionnaire, respectively; in relation to the feedback is provided from a submitted incident as part of daily work tasks. When converted to a nominal value, the average result has shifted from 'disagree' to 'neutral'. All 3 participants from the study ward indicated an improvement of 2 in their numerical scores. When converted to the equivalent nominal score, there was a shift from 'disagree' to 'agree'.

The following tables summarise the responses in relation to the 2 questions regarding the feedback specialist:

Table 18: Summary of responses in relation to the question “I was satisfied with the availability of the feedback specialist”

Response	Study Ward (n)	Study Ward (%)	Control Ward (n)	Control Ward (%)	Overall (n)	Overall (%)
Strongly Disagree	1	3%	0	0%	1	3%
Disagree	3	10%	0	0%	3	8%
Neutral	2	6%	3	43%	5	13%
Agree	16	52%	2	29%	18	47%
Strongly Agree	4	13%	0	0%	4	11%
No Opinion	5	16%	2	29%	7	18%
Total	31	100%	7	100%	38	100%

Table 19: Summary of responses in relation to the question “Please rate your overall experience with learning from feedback provided by the feedback specialist”

Response	Study Ward (n)	Study Ward (%)	Control Ward (n)	Control Ward (%)	Overall (n)	Overall (%)
Very Poor	0	0%	0	0%	0	0%
Poor	4	15%	0	0%	4	13%
Average	7	26%	3	60%	10	31%
Good	15	56%	2	40%	17	53%
Very Good	1	4%	0	0%	1	3%
Sub-Total	27	100%	5	100%	32	100%
Blank	4		2		6	

16 out of 27 participants of the study ward participants rated the overall experience with the feedback specialist as either ‘good’ or ‘very good’, compared to only 2 out of 5 participants of the control ward participants. However, the low response rate from the control ward may not afford a satisfactory representation of the control ward staff. The study ward shows 16 participants indicated a ‘good’ or ‘very good’ response; however, it is noted that only 9 staff members from the study ward received personalised feedback from the feedback specialist. Additionally, 4 participants rated their experience as ‘poor’ and 7 participants rated their

experience as 'average'. It is acknowledged that these results require further context, such as whether the participant directly received feedback from the feedback specialist. Responses should be considered validated for those participants that confirmed they received feedback; conversely, participants that critiqued the feedback specialist without having received feedback first-hand should have their responses disregarded for the questions featured in Tables 18 and 19.

Overall, the average rating of the overall experience with the feedback specialist was 3.0 and 3.5 for the pre-questionnaire and post-questionnaire, respectively. When translated to the nominal value, these values are akin to 'neutral' and 'neutral / agree'. If this average rating is viewed at the ward level, the average rating of the feedback specialist in the study ward is 3.1 and 3.5 for the pre-questionnaire and post-questionnaire, respectively. Conversely, the control ward counterpart ratings are 2.4 to 3.4 for the pre-questionnaire and post-questionnaire, respectively. There is a shift of 1 rating point for the control ward (compared to 0.4 for the study ward); however, it is noted that there is a smaller number of participants from the control ward in the post-questionnaire ($N = 7$) and even a smaller number of participants that answered the question in relation to rating their overall experience with the feedback specialist ($N = 5$). This is in contrast to the study ward, which had 31 participants in the post-questionnaire and 27 participants that answered the question in relation to rating their overall experience with the feedback specialist (87%).

Impact of Short Cycle Feedback on Organisational Learning

The pre-intervention questionnaire featured a section on incident learning, which included 26 individual questions regarding the utilisation of reported incidents for educational outcomes. A summary of these results is featured in the table below. It is noted that responses which were blank or indicated 'no opinion' were omitted.

Table 20: Summary of responses in relation to the section regarding 'incident learning' from the pre-intervention questionnaire

Question	n	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Learning from incidents is an important policy objective of my organisation	32	3%	0%	13%	56%	28%
The program for learning from incidents in my organisation improves patient care	34	3%	6%	12%	62%	18%
In my organisation, people tend to cover up mistakes	30	23%	37%	23%	13%	3%
People in leadership positions are committed to learning from incidents	33	0%	9%	15%	61%	15%
In my organisation there is no blame or stigma attached to reporting an incident	32	6%	22%	9%	50%	13%
I would feel quite comfortable reporting an incident in which I made an error or omission	34	0%	21%	6%	65%	9%
I learn from my own incidents, but not from incidents involving others	32	16%	66%	9%	6%	3%
I would know how to respond appropriately if I saw an incident occur	34	0%	9%	18%	53%	21%
Secrecy between different departments, specialisations or functions makes it difficult to learn from incidents	29	3%	24%	21%	34%	17%
Incidents in my organisation are investigated impartially and objectively	28	7%	14%	25%	39%	14%

I have learned how to do my own job better by learning about mistakes made by my co-workers	34	3%	12%	12%	62%	12%
My organisation allocates sufficient resources to incident investigations	25	0%	20%	44%	32%	4%
Incidents do not happen in my organisation	34	50%	38%	12%	0%	0%
Recommendations from incident investigations are acted upon	29	3%	7%	24%	52%	14%
My organisation turns lessons learned from incidents into actions that improve the patient care system	32	3%	9%	13%	66%	9%
My organisation treats incidents as learning opportunities	34	3%	15%	18%	56%	9%
My organisation ignores incidents as long as no one gets hurt	30	20%	67%	7%	3%	3%
Lessons learned from incident investigations are communicated to staff	33	15%	9%	24%	42%	9%
Differences between departments, specialisations or functions make it difficult to improve the system	29	7%	31%	14%	48%	0%
The program for learning from incidents in my organisation improves operational effectiveness	30	0%	23%	13%	60%	3%
My organisation rewards or recognises individuals and teams for effective incident reporting and investigation	28	18%	32%	29%	18%	4%
My organisation accepts that people make mistakes and puts the focus of incident investigations on system improvement	30	0%	7%	33%	47%	13%
My organisation shares learning from incidents with similar organisations within the health care system	22	0%	23%	18%	50%	9%
The workload and paperwork involved in learning from incidents outweighs the benefits	30	10%	33%	37%	13%	7%
I feel that incidents present learning opportunities that can improve daily work tasks and patient safety	32	0%	0%	6%	66%	28%

Furthermore, when asked to rate the organisation's overall ability to learn from incidents, 56% of participants indicated either 'good' or 'very good'. Additionally, there were 38% that indicated 'average' and only 6% indicated 'poor'. No participant indicated 'very poor'.

From the pre-intervention questionnaire results, it was demonstrated that 75% of participants either 'agreed' or strongly agreed' that the organisation converts lessons arising out of incident reports and transforms these lessons into patient safety improvements. Additionally, 60% of participants either 'agreed' or 'strongly agreed' that the focus of incident investigations is placed on system improvement, as opposed to being a punitive process. In contrast, 22% of participants either 'agreed' or 'strongly agreed' that rewards or recognition is given to either teams or individuals for effective incident reporting and investigation. Overwhelmingly, 94% of participants either 'agreed' or 'strongly agreed' that incidents present learning opportunities that can improve daily work tasks and patient safety, which emphasises that incident reporting can be an effective organisational learning tool.

A comparison of common questions from the pre-intervention questionnaire and post-intervention questionnaire was undertaken in order to understand whether a tangible improvement in learning capabilities from incident reporting was achieved. As such, there were 2 specific questions in the above-mentioned questionnaires that addressed this: i) the feedback provided to me improves my awareness about patient safety; and, ii) I believe the feedback I receive improves my job performance and / or skills. There were 7 participants that had answered both questions in the pre-intervention questionnaire and post-intervention

questionnaire, which allowed a direct comparison. Furthermore, 5 out of 7 participants were from the study ward, which received the direct feedback; however, it is noted that these 5 participants may not have received the direct feedback personally, due to the anonymous nature of the questionnaires and provision of feedback. For the purposes of understanding whether feedback provided during the study had an effect on organisational learning, the results for the participants from the study ward will be taken into consideration only.

On average, there was an improvement in the question regarding awareness of patient safety when converted from numerical to nominal values (based on the Likert scale), with participants reporting a 'neutral' response and 'agree' response for the pre-questionnaire and post-questionnaire, respectively. This would suggest that the provision of feedback from incident reporting has contributed to increased patient safety awareness, with learning opportunities arising from this information. The existence of collegiate knowledge sharing, whilst not measured, is supported by staff responses in the pre-questionnaire, particularly in relation to the questions "I learn from my own incidents, but not from incidents involving others" and "I have learned how to do my own job better by learning about mistakes made by my co-workers". Respectively, 82% of participants indicated either 'strongly disagree' or 'disagree' and 74% of participants indicated either 'agree' or 'strongly agree'. It is acknowledged that a comparison of pre-intervention and post-intervention questionnaires is attributed to the individual participant's alias. Furthermore, only 5 of the participants were from the study ward, which is a small sample size compared to the overall response rate for both the pre-intervention and post-intervention questionnaire in isolation. As such, whilst it is maintained

that the findings suggest the presence of increased patient safety awareness and learning it is accepted that a larger response rate is required to address any equivocity. Further interpretation of these results will be discussed in the subsequent chapter of this dissertation.

There was no change in relation to the question regarding feedback improving job performance or skills, as a 'neutral' nominal average score was recorded for the pre-intervention questionnaire and post-intervention questionnaire. It is noted that a time lapse of approximately 6 weeks occurred between the conclusion of the feedback phase and the completion of the post-questionnaire by the study participants. Hence, a longer period of time may allow staff to put into practice any knowledge gained from the provision of feedback.

The provision of feedback by the feedback specialist was provided to 9 individual staff members from the study ward. The composition of these staff members were: 7 nursing staff members, 1 allied health staff member and 1 administration staff member. The details of the feedback provided were documented in a standard feedback form by the feedback specialist. It was determined that a learning outcome was present if the staff member accepted a suggestion from the feedback specialist, which would benefit the staff member's clinical skills and practice. Therefore, the results demonstrate that organisational learning was present on 7 out of 9 occasions. Examples of this included:

- i) enhanced toileting scheduled for confused patients;
- ii) ordering specialised mattresses on the day of a patient's admission following a thorough review of a patient's risk to pressure ulcers;

- iii) significance of providing a detailed and accurate handover to prevent pressure ulcers;
- iv) utilising basic translation flash cards for patients from a non-English speaking background;
- v) expeditious family case conferences with the multidisciplinary team for chronic / complex patients; and,
- vi) relocating mobility-compromised patients closer to the nurses' station to prevent falls.

It is noted that 4 out of 9 participants received feedback within 72 hours, which is this study's definition of "short cycle". The occasions when feedback could not be provided within 72 hours was due to the standard clinical tasks of the feedback specialist and absence of weekend coverage, as well as reporting staff members were either on evening shift or were on sick leave. It is acknowledged that the administration of the intervention was limited for evening shift staff, due to the absence of the Clinical Nurse Consultant outside of standard business hours; however, this was to be overcome via documented correspondence, phone calls and face-to-face meetings that took place when an evening shift staff member was rostered during business hours; although, these alternative means of communication were not successful, due to the unavailability of the staff member when attempts were made to contact such a staff member by the feedback specialist. Feedback provided outside of the 72 hour timeframe should not be disregarded as it was determined that a single-loop learning outcome was present in these instances. This was evident by the feedback specialist's observation that a single-loop learning outcome was achieved via verbal acknowledgement from the recipient, including their intention to incorporate the feedback provided into their day-to-day practices.

It is noted that the provision of feedback was only applicable for staff members within the study ward that submitted identified incident reports. Obviously, this prerequisite was required in order for the feedback specialist to identify the staff member to provide feedback. As such, the number of identified and anonymous incidents are summarised in the table below:

Table 21: Number of identified incidents and anonymous incidents, per Ward

Ward	Incidents	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Total
Study	Identified	8	8	9	12	12	49
	Anonymous	9	7	3	12	7	38
	Reported	17	15	12	24	19	87
Control	Identified	10	18	13	5	11	57
	Anonymous	7	8	10	8	10	43
	Reported	17	26	23	13	21	100
Total	Identified	18	26	22	17	23	106
	Anonymous	16	15	13	20	17	81
	Reported	34	41	35	37	40	187

The types of incidents in which feedback was provided by the feedback specialist are summarised in the table below:

Table 22: Types of incidents in which feedback was provided by the feedback specialist

Theme	n	%
Fall	4	44%
Pressure Ulcer	3	33%
Complaint	1	11%
Nutrition	1	11%
Total	9	100%

These results are consistent with all incidents recorded during the study period, due to falls and pressure ulcers being incident types in which reporting into IIMS is mandatory. For comparison, during the study period, falls and pressure ulcers represented 30% (34 / 115) and 36% (41 / 115) of incident types, respectively. The transmission of feedback by the feedback specialist was entirely via face-to-face.

Impact of Short Cycle Feedback on Staff Satisfaction

In relation to questions regarding feedback from incidents a comparison of the results from the pre-intervention questionnaire and the post-intervention questionnaire is summarised in the table below. It is noted that for the purposes of comparison the responses were grouped, that being 'strongly disagree', 'disagree' and 'neutral' were grouped into the 'negative' category, whereas 'agree' and 'strongly agree' were grouped into the 'positive category'. It is noted that responses that were blank or indicated 'no opinion' were omitted.

Table 23: Comparison of results from the pre-intervention questionnaire and the post-intervention questionnaire in relation to questions regarding feedback from incidents

Question	n	Pre-Q		n	Post-Q	
		Negative	Positive		Negative	Positive
Feedback is provided to me from an incident that I have submitted as part of my daily work tasks	27	70%	30%	32	28%	72%
I am satisfied with the feedback provided to me from an incident I have reported	27	70%	30%	32	28%	72%
I am satisfied with the quantity of feedback I receive	27	70%	30%	33	36%	64%
I am satisfied with the quality of feedback I receive	27	67%	33%	32	34%	66%
I am satisfied with the timeliness of feedback I receive	26	69%	31%	30	27%	73%
The feedback provided to me improves my awareness about patient safety	27	48%	52%	32	22%	78%
I believe the feedback I receive improves my job performance and / or skills	27	48%	52%	32	28%	72%

The questions based on satisfaction with feedback from incident reporting have shifted from a dominant negative perspective in the pre-intervention questionnaire (average of 63% across all

7 questions) to a positive perspective in the post-intervention questionnaire (average of 71% across all 7 questions). It is noted that there were 24 out of 36 participants and 12 out of 36 participants in the pre-intervention questionnaire from the study ward and control ward, respectively. This is in contrast to 31 out of 38 participants and 7 out of 38 participants in the post-intervention questionnaire from the study ward and control ward, respectively. Thus, the control ward is less represented in the post-intervention questionnaire.

There was an overwhelming proportion of staff that supported the provision of short cycle feedback on a permanent basis with 80% of staff stating they 'agreed' or 'strongly agreed'. Additionally, 81% of staff 'agreed' or 'strongly agreed' when asked if they felt the feedback provided was practical. It is acknowledged that the positive response may have been attributed to the desire to have a feedback mechanism in relation to incident reporting, rather than satisfaction from direct experience with the feedback specialist. Furthermore, to preserve the confidentiality of the participants' to the post-intervention questionnaire, it is unknown whether the 9 participants in receipt of feedback from the feedback specialist actually completed a post-intervention questionnaire; and, if so, what their level of satisfaction was.

Improvement in Reporting Rates

Throughout the course of the study period, all incidents entered in to the IIMS database were calculated based on whether the notifying staff member provided their name (either first name, last name or both). As such, both wards showed that the notifying staff member was identifiable in approximately 57% of all IIMS entered on a monthly basis. Furthermore, the

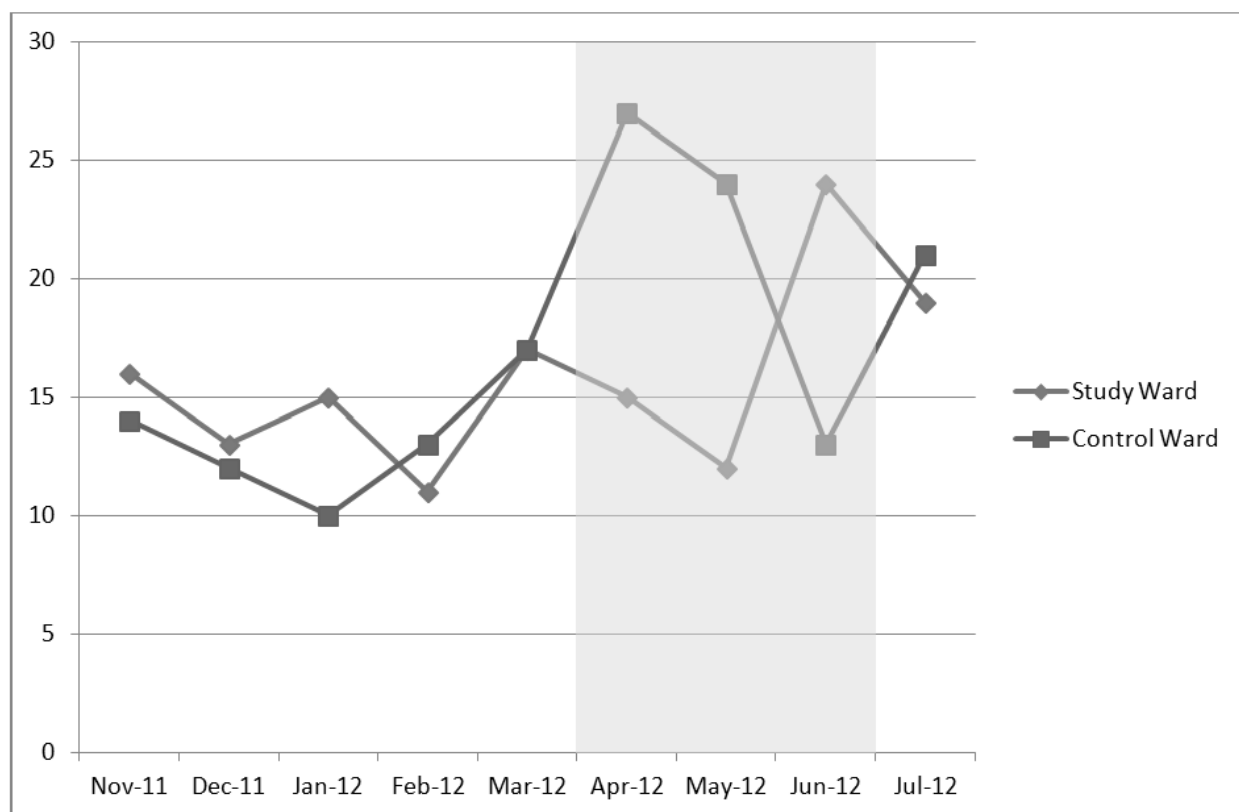
percentage of IIMS that identified the notifying staff member increased to 62% if the pre-study period (November 2011 – March 2012) and post-study period (July 2012) are included.

Conversely, in relation to incidents entered anonymously, 16 of 49 participants indicated the notifier designation, which was unanimously nursing staff. Since feedback was only to be provided to staff members that self-identified when reporting an incident, it was initially theorised that the provision of feedback by the feedback specialist would motivate staff to self-identify. The above results are equivocal as the increase in self-identified staff members cannot be solely attributed to the feedback specialist. It is suggested that participants should have been asked whether they begun self-identifying incident reports in order to receive feedback from the feedback specialist.

The number of incidents submitted by the study ward (regardless of whether the notifying staff member was identifiable or not), as a proportion of the total number of incidents for both wards, decreased in the first 2 months of the study period. It is theorised that this decrease could be attributed to the verbal query phase of the study, with staff members believing that acknowledging an incident via the verbal query process may have substituted incident reporting via IIMS. As such, this was addressed in the post-questionnaire, with a question specifically asking participants whether they reported an incident into IIMS after acknowledging the incident via the verbal querying process. Respectively, 84% of participants stated that they either 'agreed' or 'strongly agreed', confirming that they did report an incident into IIMS after acknowledging the incident via the verbal querying process. Conversely, only 3 participants 'disagreed' (12%).

The figure below shows the number of incidents reported by the study ward and control ward on a monthly basis. It is noted that the 3-month study period, in which the verbal querying process and short cycle feedback was delivered, is highlighted.

Figure 3: Number of incidents reported by study ward and control ward between November 2011 and July 2012



Decrease in Actual Incidents

The number of incidents entered into the IIMS database for both the study ward and control ward were recorded on a monthly basis. Data collection of IIMS on a monthly basis also included a 5 month period prior to the actual study taking place, which was used to identify

baseline data, notwithstanding seasonal fluctuations. On average, there were 16 and 17 incidents per month for the study and control wards, respectively. The number of incidents entered into the IIMS database was compared to the number of incidents observed, deduced during the verbal query phases of the study. The study ward demonstrated that there was a 12% underreporting rate in April ([15 incidents reported - 17 incidents observed] / 17 incidents observed) and 25% underreporting rate in May ([12 incidents reported - 16 incidents observed] / 16 incidents observed). Whilst this demonstrates that there was a decrease in incidents reported during this period, it is concerning that the underreporting rate increased in the second month of the study period. Therefore, this suggests that a decrease in actual incidents was not present, as there were a number of incidents that were unreported, as demonstrated in the following table:

Table 24: Summary of number of incidents observed vs. number of incidents reported, including results of the verbal query process

Ward	Value	Phase 2	Phase 3	Phase 4	Total
Study	Verbal Query Responses	137	173	88	398
	Observed Incidents	17	16	4	37
	Reported Incidents	15	12	24	51
	Variance	2	4	-20	-14
	Variance %	12%	25%	-500%	-38%
Control	Verbal Query Responses	9	0	0	9
	Observed Incidents	6	0	0	6
	Reported Incidents	27	24	13	64
	Variance	-21	-24	-13	-58
	Variance %	-350%	N/A	N/A	-967%
Total	Verbal Query Responses	146	173	88	407
	Observed Incidents	23	16	4	43
	Reported Incidents	42	36	37	115
	Variance	-19	-20	-33	-72
	Variance %	-83%	-125%	-825%	-167%

There was a disappointing response rate to the verbal querying process in the control ward; hence, which diminished the ability to compare the number of observed incidents to reported incidents. As a means to explain such a result, the weight of evidence seems to suggest that there was a lack of support from staff responsible to facilitate the verbal querying process (i.e. Clinical Support Officer and Nurse in-charge on shift), which was further exacerbated by limited interest by control ward staff to participate in the study. This is supported by 19 out of 45 control ward staff completing the consent form to participate in the study, as opposed to 82% of study ward staff (45 / 55). Despite attempts to meet with Nurses in-charge on shift, including evening shifts, to explain the verbal querying process, interest remained minimal. Similarly, this was consistent with Nurses in-charge from the study ward, who also demonstrated reluctance to assist with the verbal querying process, particularly after-hours and weekends. AS such, there was an average of 155 verbal querying responses across April and May. The verbal querying responses decreased to 88 in June, which is attributed to a procedural issue, as the Clinical Support Officer of the study ward was on 2 weeks leave. Consequently, the number of incidents reported in June is higher than the incidents observed, which suggests over reporting of incidents; however, this conclusion is limited as the aforementioned procedural issue would have affected this result.

Decrease in the Severity of Incidents

The severity of incidents was measured by the Severity Assessment Code (SAC). The reporting staff member of an incident is capable of entering a SAC rating (initial SAC). Despite there being literature and reference documents from NSW Health key agencies (most notably the Clinical

Excellence Commission) it is debatable whether this material is referenced by the reporting staff member when assigning a SAC rating, or whether it is purely a subjective assessment. Nonetheless, the relevant manager or supervisor of the area in which the incident occurred must enter a SAC rating (actual SAC), which may differ to the initial SAC rating.

The results from the pre-intervention questionnaire demonstrate that 88% of participants ($N = 33$) either 'agree' or 'strongly agree' that they understand the definition of an "adverse event". Additionally, 85% of participants ($N = 33$) either 'agree' or 'strongly agree' that they understand the definition of a "near miss". It is noted that 22 out of 115 (19%) reported incidents during the study period had an initial SAC rating and an actual SAC rating.

A review of SAC ratings for the study period confirmed a decrease in the severity of incidents for the study ward only. Both the study ward and control ward experienced a decrease in the severity of incidents in May, with no significant change in the number of incidents reported compared to the previous month. Overall, the average SAC for the study ward and control ward were 3.6 and 3.3, respectively.

Table 25: Summary of Severity Assessment Code (SAC) ratings for reported incidents during the extended study period (May – July)

Ward	Value	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Total	Avg.
Study	Incidents with actual SAC	17	5	2	5	19	48	
	Avg. actual SAC	3.8	3.2	4.0	3.6	3.6		3.6
Control	Incidents with actual SAC	17	14	7	6	21	65	
	Avg. actual SAC	3.5	3.2	3.6	3.2	3.2		3.3
Total	Incidents with actual SAC	34	19	9	11	40	113	
	Avg. actual SAC	3.6	3.2	3.8	3.4	3.4		3.5

During the study period (April – June) there were 53% (61 / 115) of incidents that did not have an initial SAC rating, for the study ward and control ward. Additionally, there were 66% (76 / 115) of incidents that did not have an actual SAC rating. This would suggest a further requirement to educate staff in relation to entering an appropriate initial SAC rating, as well as training for managers to assign an appropriate actual SAC rating. In relation to the latter, it is noted that this is a mandatory field in the management section of each incident in IIMS. Consequently, it is suggested that incidents that did not have an actual SAC rating did not have the management section of these incidents completed. This has implications on this study, as creating a mandatory field in the management section of each incident that indicates the provision of feedback to the reporting staff member may not ensure its completion, as the management section in its entirety can be ignored. This will be further explored in the discussion chapter of this dissertation. The following table demonstrates the SAC ratings for all reported incidents during the study period:

Table 26: Summary of Severity Assessment Code (SAC) ratings for reported incidents during the study period (April – June)

Ward	SAC	1	2	3	4	Sub-Total	Blank	Average	Total
Study	Initial	3	0	6	9	18	33	4.5	51
	Actual	0	0	6	6	12	39	10.5	51
Control	Initial	3	3	23	7	36	28	16.7	64
	Actual	0	1	17	9	27	37	15.2	64
Total	Initial	6	3	29	16	54	61	13.5	115
	Actual	0	1	23	15	39	76	9.8	115

For the purpose of differentiating between the severity of incidents (in Table 26), SAC ratings of 1 and 2 were considered 'serious' and SAC ratings of 3 and 4 were considered 'not serious'. The composition of incidents with an initial SAC rating for the study ward were 3 out of 18 incidents categorised as 'serious' and 15 out of 18 as 'not serious'. This is in contrast to the actual SAC ratings, which were 0 out of 12 as 'serious' and 12 out of 12 as 'not serious'; although, 6 incidents did not have an actual SAC rating, yet had an initial SAC rating. Conversely, the initial SAC rating for the control ward were 6 out of 36 as 'serious' and 30 out of 36 as 'not serious'. The actual SAC ratings featured 1 out of 27 incidents considered 'serious' and 26 out of 27 incidents considered 'not serious'; although, as with the study ward, there is a discrepancy between the number of incidents that had an initial SAC rating ($N = 36$) and the number of incidents that had an actual SAC rating ($N = 27$). These results suggest that completion of data fields in the management tab, including the mandatory fields, are being ignored by the authorised staff members. This is emphasised in Table 27, which shows 40% of incidents during the 5-month study period did not have an actual SAC rating.

Table 27: Summary of Initial and Actual Severity Assessment Code (SAC) ratings for reported incidents during the extended study period (March – July)

Ward	Initial SAC	Actual SAC	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Total	Average
Study	Yes	No	0	3	2	8	0	13	2.6
	No	Yes	7	3	0	4	11	25	5.0
	Yes	Yes	10	2	2	1	8	23	4.6
	No	No	0	7	8	11	0	26	5.2
	Total	17	15	12	10	24	19	87	17.4
Control	Yes	No	0	6	9	4	0	19	3.8
	No	Yes	4	6	2	2	8	22	4.4
	Yes	Yes	13	8	5	4	13	43	8.6
	No	No	0	7	8	3	0	18	3.6
	Total	17	27	24	24	13	21	102	20.4
Total	Yes	No	0	9	11	12	0	32	6.4
	No	Yes	11	9	2	6	19	47	9.4
	Yes	Yes	23	10	7	5	21	66	13.2
	No	No	0	14	16	14	0	44	8.8
	Total	34	42	36	36	37	40	189	37.8

The impact of this study has demonstrated that there has been a small improvement on the severity of incidents. As per Table 25, the combined result of the study and control wards show that the average actual SAC rating was 3.6 in March, with this changing to 3.2 in April, indicating the presence of additional serious incidents. However, this improved to 3.8 in May, which was the least serious actual SAC rating in the study period. Finally, the actual SAC rating increased to 3.4 for June and July. Whilst the seasonal impact of winter is noted, it is maintained that the learning outcomes arising out of incident reporting should have facilitated patient safety awareness and thus neutralised any impact of the higher demand winter period, including the susceptibility of an increased number of serious incidents as a result.

CHAPTER V: SUMMARY OF FINDINGS & PRELIMINARY CONCLUSIONS

Introduction and Rationale for Study 2

The outcomes and conclusions from Study 1 demonstrated that short cycle feedback to an incident reporting staff member had formative learning benefits that could be incorporated into everyday practice; however, several organisational factors throughout the study period contributed to the equivocal results of Study 1. The results from Study 1 were reviewed to determine whether the short cycle feedback system developed actually achieved the desired changes in day-to-day practice, which being improvements in patient safety and outcomes. The response of staff members from the study ward, who received short cycle feedback from the feedback specialist, demonstrated that learning outcomes were achieved, which could translate to practical improvements for the individual and organisation. However, the mechanism to test whether the learning outcome was in fact incorporated within everyday practice and subsequently produced improvements in patient safety and outcomes remained equivocal. It is suggested that the duration of the study was shorter than the period of time required to incorporate lessons learnt from short cycle feedback into everyday practice and the feedback recipient to be presented a situation in which these lessons could be applied and measured. Another metric used to substantiate whether improvements were achieved was a reduction in the severity of incidents within the study ward following the short cycle feedback intervention phase of the study. Incident severity was measured by the actual SAC rating, which decreased in the short cycle intervention phase of the study for both the study and control wards, when

compared to preceding phases. Furthermore, incident severity increased marginally in the phases following the short cycle intervention phase. Organisational factors that limited conclusions drawn from these results were the low proportion of incidents that had an actual SAC rating assigned compared to the total number of incidents and the low number of study participants that received the short cycle feedback – both factors are explored further in this Chapter. Nonetheless, it was determined that the short cycle feedback intervention had a positive impact upon the clinical practice of those staff members in receipt of it, which also encouraged incident reporting behaviour – a conclusion supported by study ward participants' positive response within the post-intervention questionnaire. To validate and refine the preliminary conclusions from Study 1 and to explore potential adjustments to the study design to avoid the organisational factors that contributed to the equivocal results it was determined that a focus group be conducted, which featured senior executive management staff members from the Local Health District that have a high level of knowledge and expertise in relation to organisational change process and practical implementation within a hospital setting. Thus, Study 2 was formulated to validate and test the preliminary conclusions from Study 1 and to extract any additional insights that may enhance the understanding of the subject matter even further. This chapter aims to examine the preliminary conclusions from Study 1 and explain the rationale for a focus group in Study 2, which was used to validate the equivocal results and explore further insights.

Organisational Factors that Affected the Short Cycle Feedback Model

Short cycle feedback was determined to have a positive influence on staff satisfaction, evident by the improvement in results from the pre-intervention questionnaire to the post-intervention questionnaire. Of the former, 70% of responses were considered 'negative', out of 27 participants. In contrast, the post-intervention questionnaire featured 72% 'positive' responses, out of 32 participants. In relation to the short cycle feedback intervention it is worth noting that there were 9 occasions of feedback provided by the feedback specialist to staff within the study ward. By comparison, it is noted that there were 45 consenting participants from the study ward that were able to submit a self-identified incident report and receive feedback from the feedback specialist. Due to the anonymity of the post-intervention questionnaire, it was not possible to measure the satisfaction of a staff member from the study ward that received short cycle feedback from the feedback specialist. Nonetheless, it is reasonable to conclude that the majority of post-intervention questionnaire participants from the study ward ($N = 31$) did not receive the short cycle feedback. Regardless, the post-intervention questionnaire results demonstrated that there was an overwhelming positive response to staff satisfaction in relation to the feedback provided to them following submission of an incident report. It is suggested that whilst study ward staff may not have personally received feedback from the feedback specialist, the observation of feedback provided by the feedback specialist, or the sharing of such an experience amongst colleagues could have contributed to the positive response regarding staff satisfaction.

As mentioned above, there were 9 occasions when feedback was provided to a self-identified reporting staff member, following submission of a reporting into the incident reporting system (i.e. IIMS). It was determined that 7 out of 9 occasions had a tangible organisational learning component, evidenced by the data recorded by the feedback specialist, which could be utilised within the everyday patient care environment. Whilst not actively measured per the feedback specialist report template, the feedback specialist documented the feedback recipient's response, which anecdotally demonstrated their appreciation of feedback provided and intent to incorporate lessons learnt into their daily patient care practices. Furthermore, all 9 recipients expressed their satisfaction with the feedback provided, with some stating that it encouraged critical thinking and reflection on their individual practices. As mentioned earlier in this Chapter, the anonymity of the post-intervention questionnaire did not enable further investigation into the individual staff member's satisfaction that had received short cycle feedback from the feedback specialist. It is possible that the feedback specialist could measure the individual staff member's staff satisfaction upon delivery of the short cycle feedback, using the Likert scale employed in the pre-intervention and post-intervention questionnaires. A limitation of this adjustment to the study design could be the "Halo Effect" (Leuthesser, Kohli & Harich 1995), due to the immediacy between feedback provided and satisfaction measured, which could skew the individual staff member's staff perceived satisfaction regarding the short cycle feedback intervention. Additionally, it is not advisable that the feedback specialist both provides feedback and measures the satisfaction regarding this feedback, as the staff member's opinion must be performed in a confidential manner to encourage the individual staff member to provide an honest opinion.

It was believed that the organisational learning component of feedback, provided by the feedback specialist, would be determined by a reduction in the severity of incidents from the study ward, measured by the average actual SAC rating. It is noted that a review of actual SAC ratings throughout the study period demonstrated that the average actual SAC rating for reported incidents within the study ward decreased from 3.2 in phase 2 to 4.0 in phase 3. Subsequently, the average actual SAC rating increased fractionally to 3.6 in phases 4 and 5. However, the preliminary conclusion that short cycle feedback resulted in organisational learning evidenced by a decrease in incident severity remained equivocal. It is suggested that there was sufficient evidence from the delivery of short cycle feedback by the feedback specialist to support that organisational learning was present; however, there was insufficient evidence to suggest that this organisational learning translated to improved patient safety. Arguably, there may have been operational improvements that were derived from the short cycle feedback intervention; which would suggest that the average actual SAC rating may have been a narrow metric regarding the measurement of practical benefits from feedback provided. As such, a potential adjustment to the study design could be to incorporate a question within the post-intervention questionnaire that explicitly asks the participant whether they received short cycle feedback from the feedback specialist and incorporated any organisational learning into their daily practices. This additional method may provide greater context, as organisational learning from short cycle feedback may be valid but not applicable to subsequent reported incidents; hence, it would appear that organisational learning is not being applied within the practical setting, whereas it is actually the nature of the incident that determines whether

lessons learnt from previous experiences can be applied. Furthermore, should a larger replication study be initiated, such questions could be explored in a follow-up questionnaire, which would afford insight into the stability of organisational learning and whether the initial feedback provided still had relevance in an operational context. It is acknowledged that the study period of the larger replication study would have to be expanded to support any follow-up questionnaires beyond the post-intervention questionnaire featured in Study 1.

The low completion rate of actual SAC rating scores for incidents within the study ward limited the preliminary conclusion that the short cycle feedback intervention had produced improvements in patient safety and outcomes. The Nursing Unit Manager is the primary staff member responsible for managing reported incidents, including the allocation of actual SAC ratings for each incident. For example, for the study ward, there were only 5 out of 24 incidents in phase 4 that had an actual SAC rating. In contrast, there was 19 out of 19 completion rate regarding actual SAC ratings for the study ward in phase 5. It is noted that the Nursing Unit Manager for the study ward was available throughout the entire study period and there were no obvious operational constraints that would have affected the Nursing Unit Manager's ability to manage incidents appropriately, specifically allocating actual SAC ratings. Furthermore, the allocation of actual SAC ratings should not be influenced by the number of incidents reported. In circumstances when the number of incidents reported were higher than average the Nursing Unit Manager could call upon additional resources that typically exist within a Hospital setting, such as a Patient Safety Manager, Operational Nurse Manager or Director of Nursing and Midwifery. The Nursing Unit Manager's non-compliance with allocating actual SAC ratings

suggests that an additional metric would have strengthened the method for verifying the impact of short cycle feedback on organisational practices and whether this resulted in improved patient outcomes. Considering that the actual SAC rating is ultimately determined by a single person, there remains an element of subjectivity that is influenced by the extent of the Nursing Unit Manager's investigation into an incident, which could be either more or less than the feedback specialist's own investigation, leading up to the point in which short cycle feedback was provided to the reporting staff member. Hence, in hindsight, a follow-up questionnaire with the staff members that received short cycle feedback may be an additional metric that could determine whether feedback was translated into improved organisational practices; however, the timeframes allocated to Study 1 would not have been conducive to such a follow-up questionnaire – although, this could be incorporated into a larger, replication study; as alluded to earlier in this Chapter.

The short cycle feedback model was not executed as expected, due to operational constraints of the feedback specialist. Part of the study's objectives was to provide feedback within a 72 hour timeframe from the point a staff member submitted an incident report to when the feedback specialist provides feedback. The results showed that 4 out of 9 recipients received feedback within this timeframe. The impediments in relation to the feedback not being provided within the designated timeframe were due to the:

- i) Absence of feedback specialist weekend coverage;
- ii) Reporting staff members on evening shifts;
- iii) Reporting staff members on leave (i.e. sick leave, annual leave); and,

- iv) Priority of work tasks by the feedback specialist, related to the feedback specialist's substantive role.

For 3 incidents that did not meet the 72 hour timeframe, it is noted that the incident was submitted on a Thursday. Due to the feedback specialist performing work tasks off-site on a Friday, per their substantive role, and no feedback specialist coverage on a weekend, the feedback specialist was unable to provide feedback until returning to the workplace on the following Monday. As the feedback specialist was limited in relation to providing feedback on a Friday, incident reports submitted on a Thursday were unable to meet the 72 hour timeframe. For 2 other incidents the reporting staff member was either on days off or was on sick leave. The timeframe in which feedback was provided was 7 days and 11 days, respectively. There was 1 incident that feedback was delayed by 25 days, due to an omission by the feedback specialist; which was immediately rectified (and feedback provided) once the feedback specialist detected this omission.

The results pertaining to the 72 hour short cycle timeframe were deemed equivocal due to the absence of any tangible contrast between recipients that received feedback within this timeframe and those that did not. Hence, it was not possible to determine whether 72 hours was the optimal time frame for the provision of short cycle feedback. Furthermore, it was unclear whether the recipient's perception that the utility of feedback provided was reduced due to the receipt of feedback exceeding the 72 hour timeframe. This demonstrates that further considerations must be made to precisely quantify the timeframe in which the utility of

feedback dissipates, in order to ensure feedback is provided within this timeframe. Hence, it was determined that recipients of feedback provided by the feedback specialist were satisfied that they were receiving personalised, formative feedback at all. This may be suggestive that recipients were within an operational environment that did not foster a positive learning experience from incident reports; hence, participants had a low threshold for expecting feedback from an incident report – this suggestion is supported by the pre-intervention questionnaire responses from study ward participants. However, the equivocal findings regarding the selection of 72 hours as the definitive short cycle timeframe would improve from further refinement should a replication study be undertaken.

Equivocal Results from Study 1

The findings of Study 1 demonstrated that short cycle feedback has a positive influence on the incident reporting culture of an organisation. This feedback, provided by a feedback specialist, was measured with unanimous support and positive staff satisfaction from feedback recipients. However, whilst it was encouraging that feedback recipients acknowledged the educational merit of feedback provided, it was limited to conclude that lessons learnt were not only applied within the operational environment, but also manifested by a decreased incident severity, measured by a reduction in the average actual SAC rating. Separate to this was the equivocal results produced in relation to whether the 72 hour short cycle timeframe had any impact on the utility of feedback provided by the feedback specialist. It is maintained that feedback must be provided within a short period of time to a self-identified reporting staff member following

submission of an incident report; however, it is equivocal whether this timeframe should be the 72 hour period used within Study 1.

The equivocal results produced from Study 1 were affected by the lack of participation, particularly from the control ward, in relation to the verbal query process used to quantify the underreporting phenomenon. Initially, it was believed that the short cycle feedback model would encourage incident reporting behaviour and mitigate barriers to incident reporting, perceived by participants and evidenced by the pre-intervention questionnaire results. However, the lack of data regarding observed incidents, which were compared to submitted incidents, was insufficient to support the conclusion that the short cycle feedback model encouraged incident reporting. Nonetheless, this conclusion was more applicable for the study ward, as more data regarding observed incidents was retrieved, compared to the control ward.

It was determined that the feasibility and implementation of the short cycle feedback model would benefit from a review by the focus group, due to the focus group participants' experience with implementing significant organisational change processes. Due to the relatively small-scale implementation of the short cycle feedback model, it was necessary for the short cycle feedback model to be tested in a larger setting, for a potential roll-out across the Local Health District and beyond. It was initially theorised that roll-out within a larger setting was necessary to ensure the theoretical and equivocal benefits fulfilled anticipated wide-spanning organisational improvements. Thus, to ensure the short cycle feedback model was critiqued in

preparation for a large-scale roll-out, rigour testing from the focus group was deemed a suitable process to achieve the further refinement the model required.

Findings from Study 1 and Organisational Learning

Within the context of this study, single-loop learning theory supports the premise that a learning outcome will be achieved by the recipient of short cycle feedback. Argyris and Schon (1978) define single-loop learning as the improvement of performance, in accordance with existing values and norms, achieved by error-detection, review and remediation. Featured throughout organisational learning theory literature is the analogous description of a thermostat to describe single-loop learning. The thermostat is bound by specific thresholds to maintain the temperature of a defined space. Should the temperature of this space either increase or decrease beyond the specific thresholds then the thermostat will make the necessary adjustments to return the temperature to within the accepted levels. Hence, a single feedback loop is activated upon detection of non-threshold temperatures, which triggers the thermostat to intervene until the accepted threshold temperatures are achieved.

Respective of organisational learning literature (Argyris & Schon 1978; Yang 2007) the individual in receipt of short cycle feedback is considered to be an organisational agent. The achievement of single-loop learning by the organisational agent would translate into organisational learning upon dissemination of such learning outcomes. The method in which learning outcomes are shared to other organisational agents within the organisation can be achieved by vicarious learning. Miner and Mezias (1996) describes vicarious learning as the

observation of learning achieved by others and incorporating successful routines into their own practices. The observation of short cycle feedback by organisational agents could support individual improvements via vicarious learning. Additionally, such an observation could alter the perceived utility of incident reporting systems and could motivate organisational agents to engage in incident reporting practices (Lawton & Parker 2002). Therefore, short cycle feedback can influence changes in the attitudes, knowledge and behaviour of organisational agents, which is evidenced by an increase in incident reporting rates. Respectively, this study aims to quantify the underreporting phenomenon; specifically, the proportion of submitted incident reports in which the author self-identifies or elects to be anonymous. If the condition of receiving short cycle feedback is to nominate the former, then it is reasonable to expect that organisational agents will both submit incidents reports and identify themselves. Such a change in behaviour is expected due to the incentive that single-loop learning will be a tangible outcome that can be applied to their organisational agent's individual clinical practices.

The impact of single-loop learning theory on participants' attitudes, knowledge and behaviour regarding incident reporting is measured by a comparison between the pre-intervention and post-intervention questionnaires. As evidenced within the literature, staff within an acute care setting have the perception that incident reporting is a burden and any benefit derived from such reports is scant. It is theorised that short cycle feedback holds value in relation to single-loop learning for both the organisation and organisational agents. The absence of a defined procedure in relation to the provision of feedback from incident reporting throughout the NSW public health system has contributed to the concept of this research. In order to achieve single-

loop learning, this researcher has defined the accepted norms and values in relation to the short cycle feedback system; those being, that feedback is provided by a feedback specialist within a 72 hour timeframe, directly to the self-identified author of an incident report. Whilst the primary objective is to achieve an improvement in clinical practice, facilitated by single-loop learning, other learning mechanisms can be achieved.

Double-loop learning results in the development of new norms and values that would otherwise be static within single-loop learning. Fiol and Lyles (1985) affirm this higher level of learning is essential to an organisation's long-term survival, particularly to develop new strategies and solutions. It is anticipated that double-loop learning will be featured throughout this research due to the importance of defining what learning outcomes are expected by the organisation. It is reasonable to accept that the majority, if not the entirety, of incident reports have a negative connotation, which ultimately affects the patient. Specifically, incident reporting is the method in which acute care facilities capture occurrences when clinical practices deviate from expected patient treatment protocols. Thus, double-loop learning enables the organisation to examine whether the norms and values which form the foundation of organisational learning from incident reporting systems are conducive to the organisation's strategies and actions (Argyris & Schon 1978). Particularly important for an industry such as healthcare, a healthcare organisation must support a learning environment that facilitates continuous or incremental improvements (Levitt & March 1988). As explored by this research, ongoing education is achieved via systems such as the short cycle feedback loop. If single-loop learning enables organisational inquiry that facilitates correction of error, fostering

improvement, then double-loop learning supports the organisation's ability to examine and modify the parameters that govern such learning practices (Argyris & Schon 1978). This is an imperative element of the organisation's strategy to achieve effectiveness and performance objectives.

Triple-loop learning or deuterolearning (Argyris & Schon 1978) emphasises the structures that compose the organisation's systems of inquiry. Essentially, the organisation's "learning how to learn" capability is determined by these structures (Wang & Ahmed 2003). Such structures can take the form of communication mechanisms, technology and procedures (Argyris & Schon 1978); all of which can either facilitate or inhibit the organisation's potential to learn and how to channel such learning into operational improvements. The short cycle feedback system within this research can facilitate triple-loop learning, evidenced by the organisation's ability to evaluate the effectiveness of incident reporting systems as a means to support organisational learning and whether enhancements to patient safety practices emerge from such lessons. Asides from individual-level learning, lessons produced from the short cycle feedback system can manifest into patient safety initiatives and programs that further enhance the learning capacity of the organisation. Quite simply, triple-loop learning maximises knowledge regarding how to convert inquiries into organisational learning. Within the context of this research, the mass collection of incidents from incident reporting systems can be transformed into learning outcomes; an objective of this study being how effective the short cycle feedback system can achieve organisational learning.

The fundamental premise of this research is that short cycle feedback will produce changes in practices and outcomes regarding clinical practices and incident reporting, facilitated by single-loop learning. Furthermore, this single-loop learning will result in improved incident rates, decrease actual incidents and decrease the severity of incidents, within the context of an acute healthcare setting. Single-loop learning should facilitate improvements in clinical practice and outcomes as a result of the learning process that occurs via short cycle feedback. Hence, the learning process that precedes single-loop learning and follows the provision of short cycle feedback enables the recipient personalised insights into their individual clinical practices, with the objective being to identify and implement improvements (Anderson et al. 2013). This individual-level learning can be disseminated across the organisation, which would satisfy Argyris and Schon's (1978) definition of organisational learning.

Preliminary Conclusions from Study 1

The short cycle feedback model produced sufficient data and evidence to warrant large-scale implementation into organisational systems across the Local Health District, in which the study Hospital is within. It is believed that large-scale implementation would mitigate the equivocal results produced from Study 1 and further expand upon the positive staff satisfaction derived from the post-intervention questionnaire. Respective of the equivocal results from Study 1, explored throughout this Chapter, the short cycle feedback model did not unequivocally justify the use of a 72 hour period in which short cycle feedback must be provided to a staff member. This is evidenced as the utility of feedback was not compromised in instances when feedback provided exceeded the 72 hour period. However, this researcher maintains that a time period

must be imposed to ensure educational benefits derived from the feedback provided remains valid and to overcome barriers that incident reporting is a meaningless exercise with no benefit to the reporting individual. Additionally, it cannot be concluded that feedback provided by the feedback specialist produced tangible organisational and patient safety improvements, as a result of the equivocal data produced from Study 1. This is due to such improvements being observable over a period of time that exceeded the timeframes of Study 1, as well as the inconclusiveness regarding decreased incident severity within the study ward. Again, it is the belief of this researcher that a larger replication study, conducted over an extended period of time compared to Study 1, would demonstrate organisational improvements as a result of feedback provided via the short cycle feedback model.

The issues experienced in Study 1 can be resolved in anticipation of a large-scale replication study, which can generate the outcomes sought from the short cycle feedback model. Several preliminary conclusions were derived from Study 1, which are:

- i) Conduct a larger replication study via either: multiple wards within the study hospital; within a larger hospital or across multiple hospitals.
- ii) Ensure the larger replication study has a larger representation of medical staff, either via specific promotional activities or enforced participation via senior management directive.
- iii) Recruit multiple senior nurses to perform the duties of the feedback specialist to ensure 24 / 7 coverage of the feedback specialist role, to support the provision of short cycle feedback particularly during after-hours and weekends.

- iv) Expand the verbal query process to encompass a variety of modalities (i.e. self-initiated and electronic).
- v) Consider offering the pre-intervention and post-intervention questionnaires electronically.

Through consultation between the researcher and the researcher's supervisor, it was determined that these preliminary conclusions would benefit from further refinement, which would enhance the implementation of a larger replication study and respective organisational outcomes. Therefore, it was decided that additional research was required prior to the larger roll-out of the feedback model. As such, a focus group was assembled with the operational authorisation of the Local Health District's Chief Executive, which enabled the researcher to validate the preliminary conclusions and explore additional practical insights offered by focus group participants.

CHAPTER VI: SECOND PHASE OF RESEARCH – FOCUS GROUP

The results produced from Study 1 were determined to be equivocal, due to organisational factors that occurred throughout the study period. As such, the preliminary conclusions derived from the equivocal results required further critical reflection. A focus group was assembled of senior health service managers and executives who focused on the applicability of Study 1 and the preliminary conclusions detailed in the previous chapter. The focus group was requested to explore the opportunities and barriers associated with the practical implementation of these preliminary conclusions within a hospital setting. Additionally, an objective of the focus group was to enable the researcher to substantiate whether the findings and preliminary conclusions were feasible in relation to achieving sustained practical implementation of the short cycle feedback model within a hospital setting and if any new conclusions should be considered.

Participants and Design

The selection process and inclusion criteria in relation to the participants of the focus group were senior staff members within South Western Sydney Local Health District (SWSLHD - the District within which the case hospital rests). The participants had 10 years or more experience in health administration and were in senior positions that carried high-level decision making responsibility, which could determine whether the recommendations arising from this study should be implemented throughout the SWSLHD. The participants also had to have direct

decision power (at various levels) in relation to possible implementation of the recommendations. As such, the focus group participants included:

- i) Chief Executive, SWSLHD
- ii) Director of Operations, SWSLHD
- iii) Director of Nursing and Midwifery Services, SWSLHD
- iv) Director of Clinical Governance, SWSLHD
- v) Director of Human Resources, SWSLHD
- vi) General Manager, Bankstown Hospital
- vii) Patient Safety Manager, SWSLHD
- viii) IIMS Surveillance Officer, SWSLHD
- ix) Manager of Clinical and Business Service, SWSLHD
- x) Director of Nursing and Midwifery, Fairfield Hospital

The focus group was conducted in order to identify what opportunities existed from the study, how to overcome barriers encountered during the course of the study and to determine whether implementation of the preliminary conclusions arising from Study 1 were feasible.

Due to the focus group discussion being recorded and transcribed, which would be incorporated into the results of this study, each focus group participant was required to complete a consent form, authorising their participation in the focus group. An example of the consent form completed by each participant is included in Appendix 5.

An invitation from the Chief Executive, on behalf of the researcher, was sent to each focus group participant, specifically inviting them to participate (Appendix 13). A briefing note was attached to this invitation, which summarised the methodology, preliminary findings and recommendations of the study (Appendix 14). An hour was allocated to the Focus Group session and only one session was scheduled.

The focus group was conducted co-jointly by the researcher and the researcher's supervisor. The discussion that took place during the focus group was recorded by an electronic recording device. The focus group participants were advised of this in the invitation from the Chief Executive, which was reiterated prior to the commencement of the focus group. While the participants of the focus group have been identified by their consent in order to underline the validity of the results, transcription did offer a level of anonymity. The recorded discussion was professionally transcribed by an independent transcription service. For the purposes of confidentiality the participants' identity could not be discerned from the recording, which ensured any reference to the focus group discussion in this doctoral thesis could not be attributed to an individual participant.

Analysis of Focus Group Data

A thematic analysis was undertaken by the researcher, based upon the transcription of the focus group discussion. An inter-rater reliability test was performed between the researcher and researcher's supervisor. It is noted that this test was also utilised in relation to the free-text

responses from the pre-intervention questionnaire. Specific nodes were defined with respect to the opportunities and barriers of the recommendations, which were explored by the focus group participants. In total there were 33 nodes derived from the focus group discussion. Consequently, there were 8 themes identified that related to the opportunities and barriers of the recommendations, with respect to the context of each node. The 8 themes are identified are all mutually exclusive of each other.

The 8 themes identified were:

- i) Applicability of recommendations throughout LHD
- ii) Duplication of effort
- iii) Further resources required
- iv) Improvement in incident reporting culture
- v) Issue of timeframes re: provision of feedback
- vi) Issue of useful / practical feedback
- vii) Lack of ownership re: incident reporting
- viii) Opportunity for greater staff engagement

A summary of the thematic analysis is as follows:

Table 28: Summary of thematic analysis performed in relation to the focus group discussion

Theme	No. of nodes (Researcher)	No. of nodes (Supervisor)	Percentage of matches
Applicability of recommendations throughout LHD	4	6	66.67
Duplication of effort	2	2	100.00
Further resources required	4	3	75.00
Improvement in incident reporting culture	3	2	66.67
Issue of timeframes re: provision of feedback	5	5	100.00
Issue of useful / practical feedback	3	5	60.00
Lack of ownership re: incident reporting	6	6	100.00
Opportunity for greater staff engagement	6	4	66.67
Total	33	33	
True	27		81.82
False	6		18.18

One of the most discussed themes by participants was “opportunity for greater staff engagement”. It is argued that this theme identified a potential benefit of broader implementation across multiple hospitals throughout the Local Health District, which was a recommendation supported via the focus group discussion. Similarly, the focus group participants recognised that the acknowledgement of receipt, in relation to the submission of an incident report, to the reporting staff member promoted staff satisfaction, regardless whether this acknowledgement featured a practical learning outcome based on the nature of the incident reported. Additionally, it was unanimously agreed that an expansion of modalities, with reference to the delivery of feedback and the verbal query process, would be more convenient and appealing for staff, enhancing overall staff participation. The focus group participants recognised that some results from the study were equivocal; however, it was accepted that even in the absence of robust empirical evidence, the objective of the study

should be adopted as it was a sensible initiative, for the benefit of an improved incident reporting culture.

Revised Recommendations

The focus group discussion enabled further refinement of the preliminary recommendations, particularly in reference to the applicability throughout larger Hospitals within SWSLHD. As such, the focus group participants raised concern about variations regarding incident reporting culture at Hospital and Ward level. There was agreement that incident reporting culture at a Hospital level should be consistent throughout the organisation; however, this may not be the case across several Wards / Departments. A theory presented by the focus group participants was that due to the variability in specialties, and potentially nature of incidents, across multiple Wards / Departments the incident reporting practices may differ. For example, falls and pressure ulcers were the most reported type of incident in both the study and control wards. It is argued that this is a reflection of the acuity of patients, who are admitted into these wards. Thus, it is reasonable to expect that falls are far prevalent in elderly, frail patients compared to less mobility-compromised patients seen in a Maternity Ward. Nonetheless, it was accepted by the focus group participants that a further study conducted across a variety of specialties, as well as in larger Hospitals within the Local Health District would strengthen the versatility and applicability of the study.

The 72 hour timeframe used as the time period in which feedback was provided to the reporting staff member via the feedback specialist was debated thoroughly by the focus group

participants. The researcher advised the focus group participants that the 72 hour timeframe was based upon the feedback specialist's ability to provide feedback that was entered on a weekend, since the feedback specialist worked during business hours on weekdays only. Whilst the 72 hour timeframe was accepted for the purposes of the study the focus group participants questioned the validity of this timeframe and whether the timeliness of feedback directly contributed to its effectiveness. Furthermore, it was determined that feedback arising from serious incidents (i.e. incidents with a Severity Assessment Code of 1 or 2) may be limited due to standard investigation processes unable to be completed within 72 hours. Potentially, the reporting staff member may become dissatisfied with the limited feedback provided, particularly if this feedback does not contain any educational benefit. As such, the focus group participants commented that feedback may be withheld, irrespective of timeliness of feedback, until appropriate investigations are completed to ensure the feedback provided contains educational and developmental value. Undoubtedly, the more serious incidents demand significant investigation, which takes time to complete. Conversely, other contributors in the focus group stated that the acknowledgement of the incident and provision of any preliminary feedback would positively contribute to the satisfaction of the reporting staff member; and hence, improve incident reporting culture.

The debate surrounding the validity of the 72 hour timeframe gave credence to future research regarding the provision of feedback within differing timeframes and what effect this has on effectiveness and staff satisfaction. A number of focus group participants questioned whether educational benefits from feedback provided to a reporting staff member would still be

meaningful within 72 hours versus a fortnight, for example. It was acknowledged that the provision of feedback within SWSLHD was poor. It can be argued that due to the absence of feedback staff have become accustomed to receiving no feedback from an incident they have reported, which is indicative of poor incident reporting culture, specifically in relation to the learning opportunities arising from reported incidents. Therefore, staff satisfaction would improve based on the provision of feedback, as the baseline in which to compare to is no feedback is provided at all. Herein is an opportunity to further explore the correlation between timeliness of feedback provided and effectiveness of feedback; the latter primarily being a subjective opinion from the reporting staff member. Additionally, the satisfaction of the staff member can be broken into 2 categories: satisfaction regarding the receipt of feedback and satisfaction on the quality of feedback provided. These 2 categories of staff satisfaction would be mutually exclusive should the link between timeliness and effectiveness of feedback be demonstrated by future research.

The focus group participants discussed the effectiveness of the feedback provided and whether there was a demonstrated learning outcome. An objective of the study is the provision of formative feedback to the reporting staff member, in order to achieve a learning outcome for the individual, which may improve their knowledge and would have flow-on improvements regarding patient safety and care. It is reasonable to conclude that incident reports are related to human error, typically performed by a member of the multidisciplinary team. This conclusion is evident from the thematic analysis undertaken in relation to the free-text questions from the pre-intervention questionnaire. As such, focus group participants commented that feedback

may be provided to the reporting staff member, whereas the reporting staff member may not have directly contributed to an adverse outcome, documented by a reported incident. For example, it was noted that pressure ulcers may be a pre-existing condition in elderly patients that have arrived to Hospital from a nursing home. Therefore, once observed, a staff member is dutifully bound to report the incident; however, feedback would be restricted to management of a pressure ulcer, rather than its prevention, considering the pressure ulcer did not originate in the Hospital setting, due to suboptimal care provided by the reporting staff member. A focus group participant commented that nursing staff often report such incidents to absolve themselves of any blame that the adverse outcome (in this instance a pressure ulcer) is attributable to their performance (or lack thereof). Furthermore, this focus group participant emphasised that feedback to the reporting staff member in the form of assurance that the staff member did not contribute to the adverse outcome could be equally as effective if there was a learning opportunity in response to human error. The focus group participants queried whether staff members were able to explain to the feedback specialist that the nature of the incident reported was not individually attributable to them. This was observed during the feedback phase, given that the feedback specialist engaged with the staff member, seeking their feedback in order to collaboratively identify a satisfactory learning opportunity. This establishes a two-way dialogue that requires critical thinking from the reporting staff member. It is believed that collaboration between feedback specialist and reporting staff member may overcome any challenges in relation to the latter accepting the feedback being offered. Additionally, this may assist in avoiding any punitive interpretation of the feedback being offered, particularly for junior staff members reporting the incident, respective of the feedback

specialist's seniority. The focus group welcomed the collaborative environment in which the feedback was provided; however, debate remained in relation to the existence of organisational learning in the absence of an error by the reporting staff member. It is argued that feedback can still exist in the absence of organisational learning, despite this being the primary objective of the study, as feedback itself can effectively enhance staff satisfaction and foster a positive incident reporting culture (Fleming 2005). This is unanimously supported by the reporting staff members who welcomed the feedback provided during the feedback phase of the study.

It is acknowledged that the feedback provided to the reporting staff member should be relevant and afford a learning opportunity that can improve their job performance; ultimately resulting in an overall reduction in reported incidents due to improved patient safety awareness. Ensuring the effectiveness and quality of feedback is meaningful to the reporting staff member is influenced by the nature of the incident reported and the aptitude of the feedback specialist. The focus group participants discussed how well feedback would have been received if the reporting staff member was a medical officer, given that the feedback specialist was a nurse. A focus group participant emphasised that senior clinicians respond more effectively to collegiate feedback. As such, it was suggested that medical involvement, in the form of a feedback specialist, could create an opportunity for further staff engagement, particularly from medical officers. This raises the issue that the feedback specialist may provide feedback to reporting staff members that are either more senior or in a different discipline; particularly that more serious incidents would potentially require more senior staff

involvement. The suggestion that feedback should be provided to reporting staff members by a feedback specialist from the same staffing discipline is potentially contentious. It is important that the feedback specialist has sufficient experience and skills to provide formative feedback and identify learning opportunities from incident reports. Organisational learning from incident reporting could be jeopardised if the nature of the incident reported exceeds the feedback specialist's knowledge and experience. Furthermore, it would be counterintuitive if the feedback specialist provided feedback that was considered in opposition to best practice, which would be a detriment to the reporting staff member. Thus, to ensure feedback provided contains learning opportunities, regardless of the complexity of the incident, a variety of feedback specialists may be warranted. Yet, there is doubt that adherence to feedback provision timeframes (i.e. 72 hours) can be achieved unless feedback specialists of all staff disciplines are available to respond. Alternatively, feedback could be provided in multiple stages, as the initial engagement with the reporting staff member could simply be acknowledgement of the incident, which would be independent on the skills or profession of the feedback specialist. The determinant factor for the method in which the feedback is provided should be contingent on the complexity of the incident, rather than the profession of the reporting staff member. The suggestion that feedback provided to a medical officer must be from a fellow medical officer exacerbates professional barriers, whereas it is argued that multidisciplinary collaboration facilitates a positive incident reporting culture. Arguably, suggested learning opportunities offered across different professions, whether it is from the feedback specialist or the reporting staff member will ultimately benefit the patient, due to a

robust, multidisciplinary approach to incorporate an identified learning opportunity into daily clinical practice.

Discrepancies amongst professions in relation to incident reporting behaviours were explored by the focus group participants. A participant suggested that senior clinicians are inclined to take a defensive stance in response to their involvement in an adverse outcome of a patient. The implication being that the organisation must accept that adverse outcomes will occur despite the best efforts of the most experienced clinicians. If this is so, then the organisation would need to determine what an acceptable threshold of adverse events is. The issue that relates to the study is the suggestion that a feedback specialist would be increasingly challenged to identify a learning opportunity based on the more senior and experienced the reporting staff member is. Additionally, another profession-based discrepancy was acknowledged, in relation to medical officer's belief that incident reporting was the responsibility of nursing staff. Underreporting of incidents by medical staff may not be a reflection of underreporting definitively, yet may be related to a lack of ownership regarding incident reporting. As was advised to the focus group participants, there were 2 incidents reported by medical staff during the study; however, feedback was not provided as these incidents were not reported during the feedback phase of the study. Both issues were linked to the recommendation that focused on gaining greater engagement with medical staff in a larger replication study. As previously mentioned, there was a suggestion that a feedback specialist from the medical profession be introduced in a larger replication study. It is argued that any benefit would be limited as a medical feedback specialist would only overcome barriers related

to the provision and acceptance of feedback to fellow medical officers, rather than any influence over their reporting behaviours. Generally, it is believed that nursing staff report due to obligation, whereas medical staff report by exception. Nonetheless, the incorporation of a medical feedback specialist is justified to overcome any challenges associated with the provision of feedback to medical officers by non-medical feedback specialists (Kievit, Krukerink & Marang-van de Mheen 2010). However, these challenges were not tested in this study due to the absence of feedback being provided to medical officers. Furthermore, it is inconclusive whether the presence of a medical feedback specialist would alter or encourage incident reporting from medical officers. Focus group participants were unable to identify specific strategies that would improve incident reporting rates by medical officers; although, this is an objective that is beyond the scope of the study.

A recommendation relating the recruitment of multiple feedback specialists, in order to achieve 24 / 7 coverage of a feedback specialist, was explored by the focus group participants. This recommendation is aimed at ensuring feedback can be provided within the 72 hour timeframe. The feedback specialist in this study undertook the role of feedback specialist in addition to normal duties. As such, 44% of feedback provided was within the 72 hour timeframe. This is indicative of the challenges the feedback specialist experienced in contacting the reporting staff members and balancing other work tasks. It was acknowledged that feedback specialist coverage after-hours was far more challenging than normal business hours. Focus group participants were adamant that the After Hours Nurse Manager in a Hospital would not be able to undertake this role, due to the demand of normal work tasks. A suggested alternative was to

utilise other methods of feedback delivery, such as electronic notes, podcasts and phone calls. It is noted that other methods of feedback delivery was not utilised in this study as face-to-face feedback was the sole method employed, even though phone calls were specifically offered as a means of delivering feedback. The focus group participants acknowledged that feedback specialists should undergo appropriate training, to equip themselves with the skills required to effectively identify a learning opportunity from an incident and educate the reporting staff member accordingly. Feedback specialist training could be incorporated into existing in-charge nurse programs and mentorship programs. A training regime for feedback specialists would ensure a consistent approach regarding the delivery of feedback. This is important for a Hospital environment in which majority of staff are not restricted to a single Ward or Department, and are often rotated throughout multiple areas. Additionally, a training program for feedback specialists would need to emphasise the delivery of formative feedback, rather than punitive feedback. The perception of the latter is indicative of feedback being delivered from a management position; hence, the requirement to carefully select feedback specialists removed of senior management positions, to avoid barriers regarding acceptance of feedback provided.

A variety of modalities was suggested to be used for the verbal query phases of a larger replication study. As suggested in relation to the provision of feedback, the focus group participants agreed that greater staff engagement can be achieved by offering a variety of modalities that staff can select, in order to participate in the study. Examples of other modalities that could be used for the verbal query phase include self-initiated, electronic and

incorporation into existing systems. The latter was debated that this could result in staff members double-reporting, which could potentially skew the number of incidents reported into IIMS and thus promulgate the underreporting phenomenon. Staff members could report all or parts of an incident into 1 system, believing that this satisfies their incident reporting obligations, excusing them from reporting into IIMS. This was accepted as a risk to incident reporting practices and to the organisation. Furthermore, it was believed that this may have been present in this study, as staff members may have perceived that the verbal query process absolved them of the requirement to report the incident into IIMS; yet, this was explicitly queried during the post-intervention questionnaire. Respectively, 84% of participants stated they 'agreed' or 'strongly agreed' that they reported an incident into IIMS despite having acknowledged this incident as per the verbal query process. A suggestions was to have staff members complete a form, either written or electronically, at the conclusion of their shift. Compliance could be determined via an audit and reconciled against the number of incidents reported. There was no discussion or conclusion regarding whether staff members would need to identify themselves on this self-initiated form; if so, this could impose on the staff member's right to privacy and confidentiality when reporting an incident. The implementation of a system to determine incident reporting compliance is beyond the scope of the study and the verbal query phase was purely to determine the presence and magnitude of the underreporting phenomenon. Ultimately, the focus group participants agreed that a variety of modalities in relation to the verbal query phase of the study would enhance staff involvement.

Both the pre-intervention and post-intervention questionnaires were only offered in written-form to participants. Based on feedback directly from study participants a recommendation to expand the questionnaires to include an electronic form was tabled to the focus group. It was noted that participating staff members may not have an electronic device available to them. Furthermore, it was noted that some staff members, particularly those that do not utilise a computer as part of their daily work tasks, could be computer illiterate. Obviously, these staff members would be better suited for the written version of the questionnaires. The questionnaires presented via different mediums are intended to enhance response rates rather than for simple convenience. Another logistical issue highlighted was ensuring computer access can be conducted via generic logins. As previously indicated, this issue would apply only to those participating staff members that do not already use a computer as part of their daily work tasks. A potential benefit from employing electronic questionnaires was the automated retention of a unique alias used by individual participating staff members. The unique alias was featured in the written versions of the questionnaires throughout the study, which was used to demonstrate changes of opinion at an individual level. There were 15 participants that used the same unique alias in the pre-intervention and post-intervention questionnaire. Thus, it was believed that individuals may have been unable to recall their unique alias due to the 3 month time lapse between questionnaires. A system that features the electronic questionnaires could store the unique alias of a participating staff member, which could be accessed via a username and password. The focus group believed that this could present difficulties with unique login credentials. Furthermore, some focus group participants were unconvinced of the comparisons between the pre-intervention and post-intervention questionnaires on an individual basis. It is

argued that this comparison can demonstrate an improvement in individual satisfaction in relation to incident reporting culture and should be justifiably retained in a larger replication study. Furthermore, potential difficulties with ensuring unique login credentials for participating staff members could be overcome by utilising their existing login credentials used when accessing a computer workstation. Whilst this is not applicable to non-computer using participants, it is believed that these participants would be undeterred from completing the written version of the questionnaires.

A constant theme that emerged from the focus group discussion was the practicality of feedback and the inherent benefit to the organisation. Essentially, this could be interpreted as the return on investment. The Local Health District Executive and senior managers that composed the focus group were naturally cautious about extrapolating findings from this study to determine meaningful practical implications. It was queried as to what further studies, both in size and scope, would be required in order to conclusively adopt the study's fundamentals objective of feedback provision from incident reports. Interestingly, some focus group participants debated how the provision of feedback should be activated. If the reporting staff member did not err in their involvement of an incident then there is no learning opportunity for both the individual and organisation. As suggested by a focus group participant, the provision of feedback in this instance is providing reassurance to an individual that they were not at fault. It is argued that the provision of feedback should not be contingent on an error made by the reporting staff member. Furthermore, ongoing professional development can arise out of such incident reporting feedback mechanisms. Conversely, recurrent incidents reported by the same

staff member for the same incident can raise concerns about the staff member's performance and risk to patient care, which could potentially warrant separate interventions that would address any performance issues. Regardless, it is maintained that an investment by the reporting staff member should be complimented by an investment from the organisation in the form of feedback. Again, this fosters a collaborative environment to determine appropriate prevention of incidents. Should the feedback mechanism be implemented across the Local Health District or NSW Health system there would need to be an established method for documenting the provision of feedback. Ideally, this would occur within IIMS, either in the notes section or in a newly created section specifically designed for feedback provision.

The focus group discussion afforded a meaningful critique of the preliminary findings and recommendations. The practical implications of the latter were discussed in detail and suggestions made were used to refine the recommendations, to ensure widespread applicability for a large, metropolitan Local Health District. Whilst comments were made on strategies to enhance staff participation the focus remained on constructing a larger replication study that would test the practical implementation of the study on a broader scale. A comparison between the recommendations derived from the experimental phase of the study and the focus group discussion demonstrate consistent themes. For example, it is established that a larger, replication study with a focus on medical officer engagement is warranted. This can be achieved by recruiting a medical officer as a feedback specialist, which may also achieve the recommendation to have the feedback specialist be available 24 hours a day, 7 days a week. Additionally, a consistent theme was to have a more autonomous approach to data

collection, via a self-initiated verbal query process and enabling the electronic completion of the pre-intervention and post-intervention questionnaires. The only difference between the preliminary recommendations and the recommendations made following the focus group discussion is to incorporate incident reporting learning tools into existing educational and mentorship programs. It is acknowledged that this was not a consideration of the research study; however, for the purposes of consistency and organisational-wide implementation, a synthesisation of these elements can prove valuable.

The revised recommendations are:

- i) Conduct a larger replication study at a larger Hospital and across multiple specialties.
- ii) Ensure the larger replication study has a larger representation of medical staff, via recruitment of a medical officer to perform the role of the feedback specialist (in addition to nursing-based feedback specialists).
- iii) Recruit multiple senior nurses to perform the duties of the feedback specialist to ensure 24 / 7 coverage of the feedback specialist role, to support the provision of short cycle feedback particularly during after-hours and weekends.
- iv) Incorporate educational tools into existing in-charge nurse and mentorship programs, to ensure a consistent approach to the provision of feedback by the feedback specialist.
- v) Expand the verbal query process to include self-initiated responses.
- vi) Deliver the pre-intervention and post-intervention questionnaires in an electronic format (in addition to a written format), utilising existing login credentials of computer-

using staff. The implementation of this recommendation requires further involvement with the Local Health District's Information Management and Technology Division.

CHAPTER VII: DISCUSSION & IMPLICATIONS

Summary of the Findings

The observation of single loop learning via the provision of short cycle formative feedback to an incident reporter, based upon the details of an incident report, demonstrated that such a feedback system can produce organisational learning. Staff morale and the perception of incident reporting systems utility improved, evidenced by a comparison between pre-intervention and post-intervention questionnaires. Additionally, results from the main study and focus group discussion supported the belief that double loop, triple loop and vicarious learning were also present. Double loop learning was evidenced during the focus group discussion in which participants examined whether incident reporting practices supported learning opportunities. Triple loop learning was observed by focus group participants learning how staff members of the organisation could learn from incident reporting systems. Vicarious learning was evidenced by the results of the study group participants' post-intervention questionnaire, which demonstrated skill improvement for participants who may not have received short cycle feedback directly. The results of the research study, specifically the derivation of different types of learning, demonstrated the capacity of the feedback intervention system to produce organisational learning.

It was initially theorised that the provision of feedback following a self-identified incident report would lead to an improvement in incident reporting rates, as well as a decrease in the submission of anonymous incidents. Whilst the study ward showed a decrease in anonymous

incidents during the intervention phase of the study, the results for increased incidents and increased self-identified incidents fluctuated throughout the duration of the study; hence, due to these equivocal results it was underdetermined whether there was an improvement incident reporting rates.

The verbal query phases of the study were used to determine the presence and magnitude regarding incident underreporting rates. The study ward showed a 12% and 25% underreporting rate ($[(\text{number of incidents reported vs. number of incidents reported}) / \text{number of incidents observed}]$) during phase 2 and phase 3, respectively. Since the underreporting rate increased throughout the study it was determined that a decrease in actual incidents was not evident. It is noted that there was a negligible result for the study ward in phase 4, which was partially attributed to a decrease in verbal query responses. Additionally, there were minimal verbal query responses throughout phases 2, 3 and 4 for the control ward. As such, a decrease in actual incidents was not present in the study.

A reduction in the severity of incidents was anticipated due to the improvements in clinical practices, derived from the provision of short cycle feedback. There was a decrease in the severity of incidents for the study ward during and following the feedback intervention phase, evident by a reduction in the average actual SAC rating from incidents submitted into IIMS. This is consistent with the initial theory that single loop learning would translate into tangible competency improvements, leading to a reduction in serious incidents. However, it is noted that the control ward also demonstrated a reduction in the severity of incidents during the

latter phases of the study. It is unknown whether such a reduction was coincidental considering that there was no feedback intervention present on the control ward. Throughout the study period, it was observed that 66% of incidents reported in both the study and control wards did not have an actual SAC rating. Therefore, non-compliance regarding entry of an actual SAC rating limited the conclusion that the short cycle feedback intervention reduced the severity of incidents.

Contribution to Theory

This section will explore the comparisons between the research study and the literature, specifically in relation to organisational learning theories and incident reporting systems, in order to demonstrate the contribution to theory made by the present study.

Comparisons with Organisational Learning Theories

Previous theory and research into organisational learning has indicated that providing short cycle feedback in an incident reporting system could facilitate organisational learning. This study found that providing short cycle feedback did facilitate organisational learning, specifically by facilitating single-loop learning. However, the study also demonstrated that providing short cycle feedback also facilitated organisational learning by facilitating double-loop learning, triple-loop learning and vicarious learning. The focus group identified learning outcomes, which explored the organisation's learning infrastructure and the relationship to incident reporting systems. Additionally, vicarious learning within the study ward was

evidenced by the post-intervention questionnaire. This substantiates that participants were not required to be in direct receipt of short cycle feedback in order to benefit from the associated single-loop learning, as knowledge acquisition was achieved via observation of a learning outcome (Miner & Mezias 1996). This highlights the importance of social interaction amongst organisational members to support an organisational learning culture (Michailova & Sidorova 2011). Common barriers to reporting were overcome due to a reinvigoration of incident reporting utility, in the form of personalised feedback within a short timeframe. Whilst it was expected that single-loop learning could be achieved by short cycle feedback, this system emphatically demonstrated that other forms of learning were achieved; thus, illustrating that short cycle feedback has a greater ability for organisational learning than originally anticipated. This study empirically demonstrated that short cycle feedback facilitated additional forms of organisational learning; thus, illustrating that short cycle feedback can make a greater contribution to organisational learning than originally anticipated.

Organisational learning was evidenced by participants engaging in behavioural change as a result of receiving short cycle feedback. The provision of short cycle feedback was not previously experienced by participants and does not feature as a common operational initiative on the ward beyond this research study. Participants were able to observe the provision of short cycle feedback, which altered pre-existing incident reporting behaviour and motivated participants to report an incident to qualify for receipt of short cycle feedback. This was evidenced by a positive change in participants' responses to survey items regarding the utility of incident reporting in the pre-intervention and post-intervention questionnaires. Participants

perceived that incident reporting did not have any utility, which would benefit the individual following them taking the time to enter an incident, on top of their existing workload demands. Such incident reporting barriers are consistent with the literature (Lawton & Parker 2002; Mahajan 2010). Thus, this barrier was overcome once utility in the incident reporting system was restored. The transformation of feedback into single-loop learning proved that incident reporting barriers could be overcome, leading to improved incident reporting practices, in addition to fostering an environment that facilitates organisational learning. Additionally, as described by Reason (2005; 2012), the necessity to develop greater risk awareness by professionals (or frontline healthcare workers, in the context of the research study) will lead to an enhanced ability to detect and recover from errors. This is a defining characteristic of a high risk organisation, which is to ensure heightened awareness of risk exposure (Reason 2012).

Double-loop learning was primarily featured during the focus group component of the study, whereby new values, ideas and expectations regarding incident reporting systems were explored. The short cycle feedback system positively influenced the behaviours, attitudes and perceptions of participants in relation to incident reporting – an example of double-loop learning as individual's values regarding incident reporting was changed. Furthermore, such positive changes in participants' perception of incident reporting can potentially lead to improvements in incident reporting rates (Anderson et al. 2013), which would enhance the knowledge base of incident reporting systems (Wang & Ahmed 2003). The study's parameters that guided the provision of short cycle feedback were critiqued in order to determine that feedback provided is consistently beneficial for the individual and the organisation. The focus

group were unanimous in their agreement that feedback is a valuable tool to stimulate a learning environment – an assertion consistent with the literature (Crommelinck & Anseel 2013). It is through this analysis of the values and norms that govern incident reporting systems that formulate new concepts that can enhance organisational learning (Kim 1993). As explored by Reason (2012), an organisation must foster a reporting culture in order to become a learning culture. This was evident during the focus group discussions, whereby participants considered what adjustments were required to encourage incident reporting, which would lead to greater learning opportunities. This complements other works by Reason (1990) that defences of an organisation will mitigate the conditions in which latent failures, embedded within organisational systems, will reveal themselves. As such, cultivating a learning environment, achieved by systems and principles that facilitate incident reporting, will ensure robust defences to both serious incidents and near misses; thus, minimising organisational risk.

Focus group critiques and scrutiny of the preliminary findings of the research study satisfied the definition of triple-loop learning. This is evidenced by the organisation, represented by focus group participants, learning how effective was short cycle feedback in facilitating continuous improvement and how it could enhance organisational learning capabilities in the future. Focus group participants demonstrated their engagement in triple-loop learning via critical discussion of the factors they perceived were facilitating or preventing short cycle feedback from producing organisational learning. One example was the debate among focus group members about whether the 72 hour timeframe for providing short cycle feedback might prevent or facilitate learning. The 72 hour timeframe that defined the short cycle was critiqued by focus

group participants, with majority querying at what point single-loop learning deteriorates due to delays in the provision of feedback. However, it is suggested that study participants were appreciative to receive feedback at all – a reflection of the organisational environment and evidence that further work is required to support organisational learning. This is supported by Reason (1990) who stated that enhancements to system safety cannot be acted upon if not delivered in a timely manner. Although, it is acknowledged that this invokes the subjectivity of what is timely, according to those participants in receipt of such feedback. Although, there was no findings to suggest that the individual-level learning effect was compromised for those study participants that did not receive feedback within 72 hours, compared to their counterparts that did. This was evidenced by the voluntary acknowledgement from focus group recipients that they would incorporate the advice received from the feedback specialist; regardless of the timeframe in which the feedback was provided. Although, this may have been a result of the “feedback starved” environment in which the participants worked in. Thus, there is potential for participants to become accustomed to receiving feedback within a set timeframe. As such, Shaw and Fairhurst (2008) explored the expectation by the Generation Y workforce for immediate feedback, which can influence potential recruitment and retention strategies. Similarly, participants’ perception of short cycle feedback utility could diminish should feedback timeframes not be adhered to; hence, a commitment by the organisation to provide short cycle feedback is essential. It is argued by that the presence of feedback at all is a more accurate determinant of participant satisfaction than timeliness of feedback provided; however, this is contingent on an environment that is devoid of any feedback-loop, as was evident within this research study. Conversely, once a feedback mechanism is established, participants could

become accustomed and thus transfer their expectation (and satisfaction) on feedback timeliness, which is influenced by the demand for feedback.

Table 29: Summary of organisational learning definitions, in relation to the research study

Term	Definition	Reference	Example
Single Loop Learning	Single loop learners look only to the immediately preceding actions for an explanation and the lesson	Reason, Carthey & de Leval 2001	Relocating mobility-compromised patients closer to the nurses' station to prevent falls
Double Loop Learning	Recognising that incident reporting leads to feedback; changing behaviour rather than outcome	Smith & Elliot 2007	Incentivising incident reporting for users, respective of a mandate of feedback provision
Triple Loop Learning	Learning how to learn	Argyris & Schon 1978	Observation by the focus group participants regarding the organisation's ability to learn how the organisation's agents learn is determined by the effective promotion of learning opportunities

Comparisons with Incident Reporting Systems

The previously reported perception of incident reporting as a meaningless process (Braithwaite et al. 2010) was consistent with the findings of this study. This is evidenced by the dissatisfaction of staff in relation to their perceived lack of utility regarding incident reporting, documented via the pre-intervention questionnaire. The severity of incidents decreased during the feedback intervention phase of the study, compared to preceding phases; a finding

supported by Franklin et al. (2007), who stated that the utilisation of incident reports for training purposes can reduce error rates.

The impact of the study on patient safety interventions can improve the utilisation of incident reporting systems by frontline staff. By delivering expeditious feedback to frontline staff, these staff will be equipped with the information required to generate improvements in patient safety (Clarke et al. 2010). Feedback delivered in a formative nature can facilitate a learning environment, essential to fostering the training of staff, particularly junior clinicians (Lake & Landau 2007). The use of incident reporting systems as a learning tool can enhance the clinical practice of staff, improving patient care and safety (McCulloch et al. 2009). Performance improvements as a result of lessons derived from incident reporting is believed to reduce the number of incidents of adverse events and near misses. A reduction in incident frequency, particularly of incidents that are adverse yet preventable, can potentially eliminate avoidable extensions of hospital length of stays (Pham et al. 2010). One example being feedback provided to study participants regarding the management of high risk falls patients. There were several occasions when the feedback specialist provided education on strategies to minimise falls in high risk patients, such as more frequent toileting and locating the patient closer to the nurses' station. Thus, the proposed study can provide useful at a NSW Ministry of Health level, as resources into the promotion of incident reporting can be reallocated to enhance the timeliness of feedback provision, which can result in patient safety improvements.

The outcome of enhanced incident reporting utilisation can result in greater “error wisdom” (Reason 2004) of users. This can be an incentive for greater compliance with incident reporting as users will acquire risk recognition skills, which can safeguard their direct involvement with either serious incidents or near misses (Reason 2002). Thus, the IIMS incident reporting system used in NSW Health must provide sufficient information for users to address system deficiencies, in order to achieve institutional resilience (Reason, Carthey & de Leval 2001). Respectively, the system-wide accessibility of IIMS has widespread learning capabilities across the system (Tucker & Edmondson 2003). Although, consistent with other incident reporting systems within healthcare (Tucker & Edmondson 2003) frontline healthcare workers are often conditioned to implement ‘workarounds’ and short-term fixes, rather than strategies to prevent incident recurrence. Whilst this may avoid or even delay serious incidents from occurring this may also artificially inflate the organisation’s confidence in their own safeguards – similar to catastrophic incidents in NASA (Madsen & Desai 2010) and oil rig disasters (Collinson 1999). It is encouraging that the formative approach with feedback provision is consistent with similar incident reporting systems that encourage positive reinforcement. Mayer et al. (2011) demonstrates that such an approach to improve hand hygiene compliance, complemented by a frequent audit and feedback technique, can facilitate positive behaviour changes within staff. It is noted that the willingness of staff can be supported by intuitive and pragmatic incident reporting systems; however, this can be jeopardised if an overwhelming amount of time and effort is required – as indicated by Naessens et al. (2010), with reference to the Institute for Healthcare Improvement’s Global Trigger Tool. The Global Trigger Tool is detailed, at the cost of being time-intensive, yet can provide significant systematic review, especially when guided by

clinical ‘triggers’ that initiate such as review (de Wet & Bowie 2009). Furthermore, this raises the possibility of the Global Trigger Tool, or similar, being used to investigate the likelihood of errors that remain undetected and escape reporting. This supports Reason’s (1990) view that latent failures exist within a system and combine with local triggering events to breach the organisation’s defences. It remains clear that the organisation must be conscious of the time invested in learning mechanisms to ensure lessons yielded are effective for the organisation and the individuals within it. The burden of time remains a common barrier to learning from incident reports, which is prominent in time-poor healthcare workers (Vincent, Taylor-Adams & Stanhope, 1998). The short cycle feedback intervention of the research study has demonstrated consistencies with other learning mechanisms found in the literature whilst attempting to act upon such lessons in a timely and effective manner (Reason 1990; Donaldson 2000).

Limitations of the Study and Opportunities for Future Research

The study took place within the general medical and surgical wards of a major metropolitan hospital. The findings from this study and the new insights it provides into organisational learning facilitated through incident reporting may also be useful to non-Healthcare organisations that use incident reporting. As mentioned in the previous chapter, this study’s contribution to the literature would be strengthened by a larger replication study, ideally across all specialities within a general hospital setting. This would determine whether incident reporting facilitates organisational learning in the same ways and through the same processes when other types of incidents are reported. Furthermore, the achievement of such generalisability would cultivate knowledge sharing across specialties, which could overcome

professional boundaries that are perceived as barriers to organisational learning (Waring et al. 2013). Therefore, future studies should expand this study to encompass all specialties, in order to promote inter-specialty learning within an organisation.

Casual and agency staff were excluded from participating in this study due to the ethical challenges respective of the organisational context in which such staff perform their duties. These types of staff are commonly rostered to work in response to permanent staff on unplanned leave. Furthermore, in specific reference to nursing within the operational setting of the study hospital, casual and agency nursing staff are required to work in any ward throughout the hospital. Therefore, this posed challenges with ensuring the appropriate consent process was conducted. It was not feasible for this researcher to seek consent from all casual and agency staff to provision if these staff members were allocated to the study wards during the course of the study and if were willing to participate. Notwithstanding these ethical implications, the inclusion of casual and agency staff in future studies would afford insight into different perceptions of incident reporting and learning. These staff members' reduced presence within the operational setting, in contrast to their permanent full-time and permanent part-time counterparts, is likely to result in unique barriers to incident reporting (Bhattacharya 2012). Additionally, casual and agency staff members' limited availability could potentially inhibit the timely provision of feedback by the feedback specialist, which may diminish the learning effects that arise from an incident report (Lam et al. 2011). Asides from the achievement of single-loop learning via the feedback specialist, other forms of learning such as vicarious learning would be influenced by the frequency of a staff member's presence within

the ward setting; a direct result of their employment type. There is value in exploring the perceptions of casual and agency staff in relation to incident reporting as it is anticipated that specific educational initiatives must be designed specifically for the casual workforce, to avoid lost organisational learning opportunities.

It is noted that towards the end of phase 4 the researcher discovered that the drop-box in the control ward for verbal query forms was removed. The Clinical Support Officer and Nursing Unit Manager were unaware of this. The Clinical Support Officer advised that there had not been any further verbal query forms placed in the drop-box following the most recent collection of forms; however, this could not be verified. The drop-box could not be found. An alternative arrangement was put in place for all verbal query forms, recorded by the Clinical Support Officer, to be provided to the researcher upon the end of each business day. Additionally, all verbal query forms completed outside of business hours (hence, in the absence of the Clinical Support Officer) were to be retained by the nurse in-charge and placed in the personal drop box of the Nursing Unit Manager (located within the control ward), for collation by the researcher on the following business day. Despite these alternative arrangements, no further verbal query forms were received for the control ward.

Whilst this study encompassed non-clinical staff there was only 1 occurrence in which feedback was provided to a non-clinical staff member by the feedback specialist. It is noted that this non-clinical staff member was responsible for managing patient complaints and had a clinical background. Furthermore, in this instance, the feedback focused on the clinical care that led to

the patient's complaint. In contrast, the hotel / support services staff (i.e. cleaners, ward orderlies) and administration staff (i.e. ward clerks and clinical support officers) who participated in the study did not report an incident. It is acknowledged that this could be due to no incidents of a non-clinical nature occurring during the feedback phase of the study; however, another possible explanation is that non-clinical staff are unfamiliar with incident reporting system requirements, including what constitutes a reportable incident. Such a notion emphasises that incident reporting systems are perceived to have a predominant clinical focus (Anderson et al. 2013), which may ostracise non-clinical staff and stifle learning opportunities. Additionally, non-clinical staff typically report incidents of a non-clinical nature (i.e. damaged equipment, personal injury), due to their limited direct interaction with patients and their limited knowledge in clinical functions. This suggests that non-clinical staff may not be able to link their work tasks with patient care. For example, a cleaner's performance has implications on infection control, which can mitigate the risk of a hospital acquired infection by a patient. Hence, a limited comprehension by non-clinical staff regarding the impact of their work tasks on patient care may inhibit their reporting behaviour, particularly for clinical incidents. The conclusions drawn from this study are limited when applied to non-clinical staff and future research would benefit from exploring incident reporting behaviours and the effect of short cycle feedback on such staff exclusively.

The study was performed in a major metropolitan public hospital within the context of the NSW public health system. Transferability to other jurisdictions (i.e. interstate, nationally and internationally) and levels of healthcare (i.e. primary, community, tertiary, quaternary) was not

explored as this was not the study's scope or objective; however, the conclusion that short cycle feedback has a greater impact on organisational learning than originally believed suggests that there is merit in replicating the study in other contexts to examine whether the relationships between incident reporting and organisational learning found here are also borne out in other environments. Particularly for international contexts, it is acknowledged that different incident reporting systems are governed by policies and procedures, specific to that jurisdiction's requirements. Reporting mechanisms and behaviours may differ across varying jurisdictions, which may alter the findings of the study. Hence, further studies in jurisdictions, other than the context of the NSW public health system, may require adjustments to maximise relevance and applicability of such a study's findings. It is established that incident reporting systems are embedded across international healthcare settings (Crommelinck & Anseel 2013), which supports the generalisability of this study in relation to feedback mechanisms within an incident reporting system.

There is value in expanding the study to incorporate multiple sites in order to mitigate any bias that may arise from unique incident reporting behaviours and perceptions from a single study site. This was not explored in this study as the study design focused only on a single study site. The culture of the study hospital may have unique cultural characteristics that can influence participants connected to the study setting, such as a strong patient safety reputation that is dependent on positive incident reporting behaviours. Per the focus group session detailed in the previous chapter, it was unanimously agreed by focus group participants that future studies encompassing multiple sites would be beneficial to determine disparity regarding incident

reporting behaviours. One outcome of such a future study could be that remedial strategies may be formulated to enhance knowledge sharing across multiple sites despite their geographical locations. This would facilitate organisational learning respective of the organisational context of the NSW public health system, namely multiple hospital sites within a single Local Health District. Furthermore, such strategies to overcome geographical barriers would be valuable for rural health services and community health settings.

The incorporation of organisational learning into everyday practice was not verified with the recipients of short cycle feedback, due to the study design. Whilst staff satisfaction was measured via the post-intervention questionnaire the recipients of short cycle feedback were not explicitly asked whether they adjusted their practices as a result of the feedback they received. However, the design of the questionnaires preserved the participant's confidentiality (via an alias), which eliminated the ability to distinguish whether a participant received short cycle feedback or not. There is value in confirming whether specific changes to practices were maintained, which could have explored the sustainability of single-loop learning. Hence, it is viable that a follow-up study can explore whether operational practices were changed, and furthermore, whether such practices reverted to pre-short cycle feedback. This coincides with the literature in which organisational learning is not a solitary event (Baker et al. 2013), but requires continuous improvement and evaluation processes to ensure learning opportunities are maximised (Yang 2007). Additionally, future studies can explore what attributes an organisation and its agents require to not only achieve organisational learning, but to retain it (Lam et al. 2011).

Results from the verbal query process, particularly for the control ward, were limited due to a low response rate. A lack of staff participation hindered the amount of data available for analysis. The underreporting rate for the study ward was demonstrated in the first 2 months of the study; however, the third month of the study produced lower response rates due to the absence of the primary data collector. Similarly, lack of engagement, ownership and understanding regarding the verbal query process in the control ward was believed to have been the cause for a minimal response rate in the first month of the study and no responses in the subsequent 2 months. Additionally, it was discovered by the researcher that the secure collection box within the control ward, used to collate the verbal query responses, was misplaced during the third consecutive month of the verbal query phase. This was not advised to the researcher by the data collectors on the control ward, which further suggested that participants were either unclear on the verbal querying process or their initial interest diminished over the course of the study period. In contrast, a perceived intrusiveness and disruptiveness of the verbal querying process by staff could explain the lack of participation. Respectively, the results of the post-intervention questionnaire demonstrate that 50% of staff ($N = 28$) either answered 'agree' or 'strongly agree' when asked if they felt the verbal querying process was disruptive. The mode in which the number of incidents observed during the course of the shift was conducted verbally as it was believed that a written alternative completed and submitted by a staff member at the end of their shift would have produced a low response rate. However, since the verbal querying was initiated by the data collector, as opposed to the responding staff member, this may have contributed to the perceived disruption, despite the

data collectors being advised by the researcher to withhold the verbal querying process when participating staff members were conducting clinical tasks. Therefore, consideration should be given to providing staff members with a written alternative compared to the verbal querying process, or both options being conducted simultaneously to maximise staff participation.

Additionally, an electronic mode of data collection may encourage greater staff participation, as suggested by the focus group. Hence, it is recommended that future studies should expand the verbal querying phase to include self-initiated written and electronic modes of data collection.

The paper-based format of the questionnaires may have limited comparisons between an individual's pre-intervention and post-intervention questionnaires, due to the requirement of the participant to recall their alias. It is accepted that a limitation of the study was that some participants were unable to recall the alias they used for the pre-intervention questionnaire when completing the post-intervention questionnaire. Aliases initially featured in the pre-intervention questionnaire were either not replicated in the post-intervention questionnaire or a similar alternative was provided. It can be explained that some participants may have completed the pre-intervention questionnaire and not the post-intervention questionnaire; however, memory recall regarding aliases employed may have been compromised due to the 3 month period between both questionnaires.

The post-intervention questionnaire was unable to determine whether a participant received feedback directly from the feedback specialist. In hindsight, it would have been beneficial to include such a question, in order to determine whether the feedback recipient had completed a

post-intervention questionnaire. Additionally, this question would have provided further insight into the prevalence of vicarious learning, as a participant may not have received feedback directly from the feedback specialist; however, a participant could have achieved vicarious learning from observing the feedback specialist. As featured in this study, participants completed a question regarding their satisfaction with the feedback specialist; however, the number of participants that completed this question exceeded the number of participants that received feedback directly from the feedback specialist during the feedback intervention phase of the study. Furthermore, the post-intervention questionnaire could have included a free-text question regarding the participant's individual experience with the feedback specialist. This may have provided further insight into the delivery of short cycle feedback by the feedback specialist. Similarly, a question regarding whether any lessons learnt were incorporated into day-to-day practices would have specifically determine whether such lessons were practical and employed. This question would have measured the utility of lessons learnt, delivered via the direct provision of short cycle feedback or via other methods of learning (i.e. vicarious learning, double-loop learning, triple-loop learning). It is suggested that the post-intervention question was designed without the benefit of the findings produced by this study; specifically, that short cycle feedback has more educational capabilities than initially thought. Hence, it is recommended that future studies expand the post-intervention questionnaire to measure the presence of the different forms of learning observed in this study, as well as determining whether lessons learnt were incorporated into everyday practice.

In the context of this study there are mandatory reporting requirements for specific clinical incidents. Pressure ulcers and falls were the 2 most types of reporting incidents, which it is argued by this researcher as a direct result of their mandatory reporting requirement.

Reframing such a mandatory reporting requirement could reduce the number of reported incidents regarding pressure ulcers and falls, which would have implications on the organisational learning associated with such incidents (Kim 1993). The impact of such incident reporting values supports the presence of double-loop learning throughout this study (Argyris & Schon 1978). Additionally, the focus group participants noted that the study design would initiate the provision of feedback to a staff member that reported a pressure ulcer or fall but may not have actually been directly involved in the patient's care. In practice, an elderly patient may have been admitted to hospital from a nursing home with a pressure ulcer. Therefore, due to the mandatory reporting requirements, a staff member within the hospital setting that observes the pressure ulcer is required to report this into the incident reporting system. The focus group agreed that this reporting staff member would receive feedback from the feedback specialist, due to having made an incident report, but may not benefit from the single-loop learning from such feedback. As the reporting staff member had no direct influence on the pressure ulcer, the focus group debated the provision of feedback and its utility, under this circumstance. Hence, a replication study must stipulate the assumption and values that initiate the provision of short cycle feedback to ensure the utility of such feedback is valid.

The presence of vicarious learning may have been featured during the feedback intervention phase of this study; however, the post-intervention feedback questionnaire did not explicitly

explore the prevalence of vicarious learning and the associated contribution to overall organisational learning. In hindsight, a replication study should include specific questions to participants that determine whether vicarious learning was present and whether emergent lessons were applied to the observing staff member's day-to-day practices. Additionally, the lessons derived from short cycle feedback could be promulgated throughout the operational environment. In practice, it is likely that a senior member of staff, such as the Nursing Unit Manager would have the authority and resources to communicate lessons amongst ward staff. This can replicate the vicarious learning process, enabling a positive change in clinical practice by staff members that may not have been directly involved in the incident in which such lessons were derived.

Practical Implications for Hospitals / Health Services

The implications for practice affect different components of the organisation: medical, clinical, managerial, and regulatory. Based upon healthcare professional experience, it is interpreted that the differentiation between medical and clinical is that the former focuses solely on doctors; whereas the latter incorporates all staffing disciplines, such as doctors, nurses, allied health and clinical support staff.

Medical

A practical implication for future research would be to use a medical staff member as the feedback specialist. Medical staff engagement is a significant challenge for healthcare

organisations that may implement a similar study that explores organisational learning. Whilst the medical fraternity typically possess the highest clinical knowledge compared to other healthcare disciplines it is important for doctors to recognise latent errors and become error-wise (Reason 2012) in order to prevent such latent errors from developing into catastrophic errors that cause patient harm. The challenge of medical staff engagement plagued this research study, as proven by the literature (Reason 2000), despite this researcher's efforts to meet individually with senior clinicians, in the hope that such seniority would filter throughout the medical hierarchy. Consequently, the transferability of findings from this research study to the medical profession may be limited; however, this does not suggest that doctors are opposed to receiving feedback arising from incidents, whereas this demonstrates that medical staff are not regular users of incident reporting systems. Therefore, this suggests that criteria to providing feedback to a doctor may need to be expanded beyond completing an incident report, such as evidence of a doctor's involvement with an incident, without having the doctor submit an incident themselves. In support of enhancing medical engagement the focus group participants determined that an additional feedback specialist from a medical background would encourage participation by medical staff in future studies. Anderson et al. (2013) states that professional barriers, primarily medicine, were overcome when feedback was exchanged amongst medical colleagues. Whilst not featured within this study, an obvious risk of a nursing feedback specialist providing feedback to a medical staff member is that the feedback can be dismissed on the grounds that the recipient may have a more thorough technical understanding of the clinical factors surrounding an incident (Waring et al. 2013); therefore, diminishing the substance of any learning opportunity afforded by the nursing feedback specialist. The

observation by medical staff regarding feedback provision to colleagues or other clinical disciplines may encourage incident reporting amongst the medical fraternity. This may afford alternative perspectives on reported incidents from a workforce typically infamous for underreporting (Mahajan 2010).

Clinical

The research findings have several practical implications for hospitals and health services. Whilst formative feedback overcomes incident reporting barriers (Mahajan 2010) healthcare organisations wishing to implement short cycle feedback into incident reporting should consider whether the Nursing Unit Manager is the appropriate position to provide feedback to the reporting staff member. This was considered as part of the study design, resulting in a senior nurse, other than the Nursing Unit Manager, providing the feedback. In a practical, everyday setting, the nursing staff report directly to the Nursing Unit Manager; hence, recipients of feedback may interpret this in a punitive manner, which may deter incident reporting (Collinson 1999), as the feedback is being provided from a position of authority. Therefore, healthcare organisations must determine who it is appropriate to have act as the feedback specialist. Consideration must be made to whether a staff member should occupy a feedback specialist role based upon their authority or their experience. There are 2 particular advantages which could result from allocating such a role based on experience. One is that an experienced staff member possesses sufficient knowledge to determine gaps in clinical practices that can be improved via formative feedback. Additionally, the experience of the

feedback specialist can translate to perceived respect by the feedback recipient, enabling acceptance of feedback delivered as it originates from a credible source (Waring et al. 2013). In a typical acute healthcare setting, a Clinical Nurse Educator can undertake a feedback specialist role. This is a senior nursing role that requires a high-level of education and communication skills, which are qualities befitting of the feedback specialist. However, the feedback specialist must encourage a collaborative learning environment, in order to prompt the incident reporter to develop solutions themselves (Tucker & Edmondson 2003), rather than a prescriptive lecture style.

Managerial

The feedback intervention can modify management practices particularly in relation to enhanced responsibilities regarding feedback provision to reporting staff members.

Additionally, management may be required to adjust operational practices dependent on the type of feedback provided, particularly once patterns emerge at a departmental level. Feedback can be transferred into formalised educational programs that have implications for clinical practice. Furthermore, such programs have the potential to be customised according to the feedback provided within a particular ward or specialty. The utility of these programs becomes enhanced due to improved specificity of training, in response to actual events (and practice deficiencies).

Organisations wishing to implement short cycle feedback should also consider how many specialists are engaged to provide it. During the course of the intervention phase, the feedback specialist was required to administer short cycle feedback on 9 separate occasions. As mentioned in previous sections, the feedback specialist was able to adhere to the 72 hour short cycle period for 4 out of 9 occasions. Day-to-day work tasks of the feedback specialist, staff rosters and absenteeism hindered the administration of feedback within the 72 hour short cycle period. If this study were to be replicated on a larger scale (i.e. whole of Hospital approach) then it would be necessary to engage multiple feedback specialists, to improve the likelihood that feedback could be delivered within the 72 hour short cycle period without being impacted by the aforementioned factors. One advantage could be that multiple feedback specialists could provide coverage for each other, should this responsibility be in addition to demands of the substantive position; evident in this study as the feedback specialist undertook the responsibility of delivering feedback in addition to normal day-to-day work tasks. Additionally, as indicated previously, an enhancement of feedback specialists should include staff from varying clinical backgrounds (i.e. medical, allied health) to overcome any professional barriers. Employing multiple feedback specialists could also help to ensure that more staff members receive feedback and opportunities to learn. This study demonstrated that the feedback specialist was unable to provide feedback to some staff members as they were rostered on the weekend; as such, the 72 hour short cycle period lapsed by the time the feedback specialist next had an opportunity to meet with the staff member, which was typically the first business day of the following week. Weekend and after-hours coverage would support future studies, particularly if replicated in a larger organisation and across multiple specialities.

Organisations looking to implement short cycle feedback for incident reporting, particularly calculating the magnitude of underreporting, should also give consideration to providing staff members with a written alternative compared to the verbal query process, or both options being conducted simultaneously to maximise staff participation. Additionally, an electronic mode of data collection may encourage greater staff participation, as suggested by the focus group. These initiatives may help to address the factors which limited participation in the feedback provision in this study, such as achieving the set timeframe between incident reporting and feedback provision. Furthermore, timely feedback was challenging due to rotational rosters of staff members, which limited face-to-face feedback provision by the feedback specialist. A mode of feedback provision could be selected by participants at the commencement of the study, which may facilitate information exchange between the feedback specialist and the staff member.

Organisations wishing to implement and evaluate short cycle feedback in incident reporting should also consider making the pre-intervention and post-intervention questionnaires available electronically. The focus group participants suggested that electronic questionnaires may be more appealing to study participants, which can lead to an increase in participation. Electronic questionnaires could overcome the issue of alias memory recall by automatically restoring an alias upon completion of the post-intervention questionnaire. A participant's alias can be linked to the individual's login credentials when accessing the electronic questionnaire. A focus group participant suggested that such credentials could be linked with the same

credentials a staff member would use to access computer systems as part of their day-to-day tasks. However, it is acknowledged that this may only be applicable to clinical staff, compared to non-clinical staff such as cleaners and ward orderlies. An electronic questionnaire could also prevent the unlikely occurrence of multiple participants employing the same alias, with the system 'blocking out' any attempts of using an alias that has already been entered.

Comparisons at an individual participant level can be achieved only in the event that the same alias is used for both the pre-intervention and post-intervention questionnaire. Electronic questionnaires could enhance such individual participant level comparative data by eliminating the necessity for participants to recall aliases, which could become problematic if a longer study period was employed. It is recommended that future studies ensure questionnaires are made available in electronic form, which could enhance participation, eliminate memory recall issues regarding a participant's alias and facilitate comparative analysis between the pre-intervention and post-intervention questionnaires at an individual participant level.

A practical challenge for management is ensuring the appropriate level of management assumes control over any improvements identified via discussions between the feedback specialist and reporting staff member. Lessons learnt from incident reports may benefit from the categorisation of incidents according to what level of management can facilitate implementation of patient safety lessons. Such an approach is similar to the London Protocol (Taylor-Adams & Vincent 2001), which is to ensure systems thinking and solution ownership, as well as promoting a positive safety culture. It must be noted that solutions that incident reporting staff members identify must not be sanitised by line management, who may do so to

avoid any diminishment in power status or failures in their own management responsibilities (Carroll 1998). Hence, all levels of management must be held accountable in relation to promoting lessons learnt from incident reports (Reason 2000). Senior management would be required when lessons learnt can be transferred to broader areas of an organisation, which may also feature a deeper analysis of the conditions that result in errors (Reason, Carthey & de Leval 2001) Such management accountability must be recorded in an auditable and documentable format. For example, a feedback tab could be incorporated into the existing IIMS reporting system, which could ensure either a feedback specialist and / or responsible manager document the provision of feedback and any improvements arising for implementation.

Regulatory

To accurately measure the severity of an incident it is recommended that staff members are provided with further training to assign appropriate SAC ratings. The provision of short cycle feedback was believed to culminate in improved clinical practices that benefits patient safety, suggested by a minor decrease in incident severity. This study showed that the entry of actual SAC ratings into incident reporting systems was lacking. Additionally, the interpretation of SAC ratings between a reporting staff member and manager / supervisor does not correlate. The feedback intervention can encourage greater risk awareness and assessment; thus enabling improved accuracy with SAC ratings, which could lead to appropriate changes in operational practice, respective of severity.

As described in Chapter 1, the Clinical Excellence Commission (CEC) is the agency responsible for the overall governance of IIMS, within NSW Health. As such, a mandate to provide feedback to the reporting staff member must be coordinated by the CEC. The CEC would have to make changes to the IIMS system to facilitate the recording of feedback provision, which could be the addition of a feedback tab to the IIMS system, as previously described. Such a system-wide mandate could encourage vicarious learning amongst healthcare organisations within the system, such as NSW Health. Potential lessons could range from superficial changes in daily practice and changing learning behaviours; examples of single loop and double loop learning, respectively. Regulatory entities must be cautioned that organisations may not be compelled to accept lessons via vicarious learning due to absence of urgency and direct experiences of incidents, particularly those that are considered a disaster (Smith & Elliot 2007). Madsen & Desai (2010) described the “problemistic search” that organisations undertake in response to a disaster. Whilst disasters may be limited to a single hospital, a system-wide search is typically undertaken to ensure such a disaster cannot be replicated in other facilities across the system. It is suggested that a similar approach to scanning for latent errors or near-miss incidents may ensure constant awareness to error traps, which is a feature of high-reliability organisations (Reason 2012). Recent experiences from incidents hold greater value than older experiences (Madsen & Desai 2010). Respectively, near-miss incidents are far more plentiful and frequent than incidents with catastrophic outcomes, which ensures lessons learnt are valid and current. As such, it is recommended that regulatory entities consider the sharing of documented feedback occurrences, within an incident reporting system such as IIMS, to facilitate widespread learning (Tucker & Edmondson 2003). Therefore, IIMS has the capacity to

act as a repository for practical improvements that have arisen from incidents, which could be transferable.

Conclusion

The fundamental premise of this research study was that short cycle feedback could facilitate single loop learning. Furthermore, the study explored whether such learning could produce continuous improvement evidenced by increased reporting rates, decreased actual incidents (reduction in underreporting) and decreased severity of incidents. A change in reporting behaviours and attitudes was evidenced by the pre-intervention and post-intervention questionnaires, with the latter substantiating that vicarious learning was present within the study ward, during the intervention phase. The implementation of the short cycle feedback system positively influenced the attitudes, perceptions and behaviours of participants, evidenced by the comparison between the pre-intervention and post-intervention questionnaires. The formative and collaborative approach between the participant and feedback specialist enabled the former to be engaged when determining how to transfer the newly acquired knowledge into a practical context (Franco & Almeida 2011).

The focus group emphasised the double-loop and triple-loop learning components of the research study. Feedback from the focus group illustrated double-loop learning; for example, focus group participants queried whether the current incident reporting systems supported learning opportunities for incident reporters, which emphasised the importance of aligning incident reporting practices with the values of the organisation. Hence, it was acknowledged

that the learning potential of the organisation is not yet achieved. In order to accomplish organisational learning, the lessons derived from incident reporting systems must be disseminated across the organisation (Yang 2007). The focus group maintained it was necessary to conduct a larger replication study to determine the principles of this study could be duplicated on a larger scale to which it was originally conducted. Conversely, the focus group acknowledged the capabilities of short cycle feedback system in relation to triple-loop learning. The organisation's ability to learn how the organisation's agents learn is determined by the effective promotion of learning opportunities. The focus group accepted that incident reporting encompasses great potential to produce learning opportunities for the organisation and that the short cycle feedback system overcame barriers to incident reporting utility for this purpose.

This research study demonstrated that short cycle feedback produces single-loop learning, which results in improved clinical practices that contributes to enhanced patient treatment and outcomes. Additionally, the learning outcomes facilitated by the short cycle feedback system can reduce adverse outcome recurrence and improve patient safety. Single-loop learning was the primary theoretical principle that supported organisational learning via short cycle feedback. Double-loop learning, triple-loop learning and vicarious learning were all derived from short cycle feedback. Thus, this research advanced the theory about learning facilitated by short cycle feedback, which is concluded to be far more valuable for facilitating learning than what had previously been theorised.

REFERENCES

- Alvarez-Requejo, A, Carvajal, A, Begaud, B, Moride, Y, Vega, T & Martin Arias, LH 1998, 'Under-reporting of adverse drug reactions', *European Journal of Clinical Pharmacology*, vol. 54, no. 6, pp. 483-88.
- Anderson, JE, Kodate, N, Walters, R, & Dodds, A 2013, 'Can incident reporting improve safety? Healthcare practitioners' views of the effectiveness of incident reporting', *International Journal for Quality in Health Care*, vol. 25, no. 2, pp. 141-50.
- Argyris, C, & Schon, D 1978, *Organizational learning: A theory of action perspective*, Addison Wesley, Reading, Massachusetts.
- Australian Bureau of Statistics 2011, *Census of Population and Housing: Socio-Economic Indexes for Areas (SEIFA)*, Australian Bureau of Statistics, viewed 13 August 2013, <<http://www.abs.gov.au/ausstats/abs@.nsf/DetailsPage/2033.0.55.0012011?OpenDocument>>.
- Australian Commission on Safety and Quality in Health Care (ACSQHC) 2009, *Windows into Safety and Quality in Health Care 2009*, ACSQHC, Sydney, NSW.
- Australian Commission on Safety and Quality in Health Care (ACSQHC) 2010, *Australian Safety and Quality Framework for Health Care*, ACSQHC, Sydney, NSW.
- Australian Council for Safety and Quality in Health Care 2004, *Adverse event rates – fact sheet*, Commonwealth Department of Health and Ageing, viewed 22 November 2010, <[http://www.health.gov.au/internet/safety/publishing.nsf/Content/F3D3F3274D393DFCCA257483000D8461/\\$File/advrsefact.pdf](http://www.health.gov.au/internet/safety/publishing.nsf/Content/F3D3F3274D393DFCCA257483000D8461/$File/advrsefact.pdf)>.

Australian Health Practitioner Regulation Agency (AHPRA) 2010, *Make a Notification*, AHPRA, viewed 22 November 2010, <<https://www.ahpra.gov.au/notifications-and-outcomes/make-a-notification.aspx>>.

Baker, A, Perreault, D, Reid, A, & Blanchard, CM 2013, 'Feedback and Organisations: Feedback is Good, Feedback-Friendly Culture is Better', *Canadian Psychology*, vol. 54, no. 4, pp. 260-68.

Barach, P & Small, SD 2000, 'Reporting and preventing medical mishaps: lessons from non-medical near miss reporting systems', *British Medical Journal*, vol. 320, no. 7237, pp. 759-63.

Basu, A, Gopinath, D, Anjum, N & Hotchkies, S 2009, 'Feedback in incident reporting – more needed', *British Journal of Clinical Governance*, vol. 14, no. 1, pp. 38-41.

Beckmann, U, West, LF, Groombridge, GJ, Baldwin, I, Hart, GK, Clayton, DG, Webb, RK, & Runciman, WB 1996, 'The Australian Incident Monitoring Study in Intensive Care: AIMS-ICU. The Development and Evaluation of an Incident Reporting System in Intensive Care', *Anaesthesia and Intensive Care*, vol. 24, no. 3, pp. 314-19.

Benn, J, Koutantji, M, Wallace, L, Spurgeon, P, Rejman, M, Healey, A & Vincent, C 2009, 'Feedback from incident reporting: information and action to improve patient safety', *Quality and Safety in Health Care*, vol. 18, no. 1, pp. 11-21.

Bhattacharya, S 2012, 'Sociological factors influencing the practice of incident reporting: the case of the shipping industry', *Employee Relations*, vol. 34, no. 1, pp. 4-21.

Bolsin, SN, Faunce, T & Colson, M 2005, 'Using portable digital technology for clinical care and critical incidents: a new model', *Australian Health Review*, vol. 29, no. 3, pp. 297-305.

Boudreaux, ED & O’Hea, EL 2004, ‘Patient satisfaction in the Emergency Department: a review of the literature and implications for practice’, *Journal of Emergency Medicine*, vol. 26, no. 1, pp. 13-26.

Braithwaite, J, Westbrook, MT, Travaglia, JF & Hughes, C 2010, ‘Cultural and associated enablers of, and barriers to, adverse incident reporting’, *Quality and Safety in Health Care*, vol. 19, pp. 229-33.

Brown, OW 2010, ‘Good Samaritan statutes: a malpractice defence for “doing the right thing”’, *Journal of Vascular Surgery*, vol. 51, no. 6, pp. 1572-73.

Carroll, J.S 1998, ‘Organizational learning activities in high-hazard industries: the logics underlying self-analysis’, *Journal of Management Studies*, vol. 35, no. 6, pp. 699-171.

Clinical Excellence Commission (CEC) 2009, *Clinical Incident Management in the NSW Public Health System 2009: January to June*, CEC, Sydney, NSW.

Clarke, AL, Shearer, W, McMillan, AJ & Ireland, PD 2010, ‘Investigating apparent variation in quality of care: the critical role of clinician engagement’, *Medical Journal of Australia*, vol. 193, no. 8, pp. S111-13.

Collinson, D.L 1999, ‘Surviving the rigs’: Safety and surveillance on north sea oil installations’, *Organization Studies*, vol. 20, no. 4, pp. 579-600.

Cooke, DL, Dunscombe, PB & Lee, RC 2007, ‘Using a survey of incident reporting and learning practices to improve organisational learning at a cancer care centre’, *Quality and Safety in Health Care*, vol. 16, no. 5, pp. 342-48.

- Crommelinck, M, & Anseel, F 2013, 'Understanding and encouraging feedback-seeking behaviour: a literature review', *Medical Education*, vol. 47, pp. 232-41.
- Croskerry, P 2000, 'The feedback sanction', *Academic Emergency Medicine*, vol. 7, no. 11, pp. 1232-38.
- Crossan, MM, Lane, HW & White, RE 1999, 'An organizational learning framework: From intuition to institution', *Academy of Management Review*, vol. 24, no. 3, pp. 522-37.
- Davey, P, Tully, V, Grant, A, Day, R, Ker, J, Marr, C, Mires, G, & Nathwani, D 2013, 'Learning from errors: what is the return on investment from training medical students in incident review?', *AVMA Medical & Legal Journal*, vol. 19, pp. 1-5.
- Davies, H, Powell, A & Rushmer, R 2007, *Healthcare professionals' views on clinician engagement in quality improvement*, The Health Foundation, London.
- Davis, P, Lay-Yee, R, Briant, R, & Scott, A 2003, 'Preventable in-hospital medical injury under the "no fault" system in New Zealand', *Quality and Safety in Health Care*, vol. 12, no. 4, pp. 251-56.
- de Wet C & Bowie, P 2009, 'The preliminary development and testing of a global trigger tool to detect error and patient harm in primary-care records', *Postgraduate Medical Journal*, vol. 85, no. 1002, pp. 176-80.
- Dihoff, RE, Brosvic, GM, Epstein, ML & Cook, MJ 2004, 'Provision of feedback during preparation for academic testing: learning is enhanced by immediate but not delayed feedback', *The Psychological Record*, vol. 54, no. 2, pp. 207-32.

Donaldson, L 2000, *An Organisation with a Memory: Report of an Expert Group on Learning from Adverse Events in the NHS Chaired by the Chief Medical Officer*, Department of Health, viewed 15 April 2015, <http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4065086.pdf>.

Elliott, D 2009, 'The failure of organizational learning from crisis – a matter of life and death', *Journal of Contingencies and Crisis Management*, vol. 17, no. 3, pp. 157-68.

Evans, SM, Berry, JG, Smith, BJ, Esterman, A, Selim, P, O'Shaughnessy, J & DeWit, M 2006, 'Attitudes and barriers to incident reporting: a collaborative hospital study', *Quality and Safety in Health Care*, vol. 15, pp. 39-43.

Farley, DO, Haviland, A, Champagne, S, Jain, AK, Battles, JB, Munier, WB & Loeb, JM 2008, 'Adverse-event-reporting practices by US hospitals: results of a national survey', *Quality and Safety in Health Care*, vol. 17, pp. 416-23.

Federal Aviation Administration 2010, *Aviation Safety Reporting System*, Federal Aviation Administration, viewed 18 October 2010, <<http://asrs.arc.nasa.gov/>>.

Fiol, CM & Lyles, MA 1985, 'Organisational learning', *Academy of Management Review*, vol. 10, no. 4, pp. 803-13.

Fischer, MA, Mazor, KM, Baril, J, Alper, E, DeMarco, D & Pugnaire, M 2006, 'Learning from mistakes. Factors that influence how students and residents learn from medical errors', *Journal of General Internal Medicine*, vol. 21, no. 5, pp. 419-23.

Franco, M, & Almeida, J 2011, 'Organisational learning and leadership styles in healthcare organisations', *Leadership & Organisation Development Journal*, vol. 32, no. 8, pp. 782-806.

Franklin, BD, O'Grady, K, Paschalides, C, Utlely, M, Gallivan, S, Jacklin, A & Barber, N 2007, 'Providing feedback to hospital doctors about prescribing errors; a pilot study', *Pharmacy World & Science*, vol. 29, no. 3, pp. 213-20.

Fleming, M 2005, 'Patient safety culture measurement and improvement: a "how to" guide', *Healthcare Quarterly*, vol. 8, pp. 14-19.

Freestone, L, Bolsin, SN, Colson, M, Patrick, A & Creati, B 2006, 'Voluntary incident reporting by anaesthetic trainees in an Australian hospital', *International Journal for Quality in Health Care*, vol. 18, no. 6, pp. 452-57.

Frey, B, Buettiker, V, Hug, MI, Waldvogel, K, Gessler, P, Ghelfi, D, Hodler, C & Baenziger, O 2002, 'Does critical incident reporting contribute to medication error prevention?', *European Journal of Paediatrics*, vol. 161, no. 11, pp. 594-96.

Frey, B, Ersch, J, Bernet, V, Baenziger, I, Enderli, L & Doell, C 2009, 'Involvement of parents in critical incidents in a neonatal-paediatric intensive care unit', *Quality and Safety in Health Care*, vol. 18, no. 6, pp. 446-49.

Gallagher, TH, Waterman, AD, Garbutt, JM, Kapp, JM, Chan, DK, Dunagan, WC, Fraser, VJ & Levinson, W 2006, 'US and Canadian physicians' attitudes and experiences regarding disclosing errors to patients', *Archives of Internal Medicine*, vol. 166, no. 15, pp. 1605-11.

- Hazell, L & Shakir, SA 2006, 'Under-reporting of adverse drug reactions: a systematic review', *Drug Safety*, vol. 29, no. 5, pp. 385-96.
- Health Care Complaints Commission (HCCC) 2009, *Annual Report 2008-09*, HCCC, Sydney, NSW.
- Helmreich, RL, Merritt, AC & Wilhelm, JA 1999, 'The evolution of Crew Resource Management training in commercial aviation', *The International Journal of Aviation Psychology*, vol. 9, no. 1, pp. 19-32.
- Hirose, M, Regenbogen, SE, Lipsitz, S, Imanaka, Y, Ishizaki, T, Sekimoto, M, Oh, E & Gawande, AA 2007, 'Lag time in an incident reporting system at a university hospital in Japan', *Quality and Safety in Healthcare*, vol. 16, no. 2, pp. 101-04.
- Hor, SY, Iedema, R, Williams, K, White, L, Kennedy, P & Day, AS 2010, 'Multiple accountabilities in incident reporting and management', *Qualitative Health Research*, vol. 20, no. 8, pp. 1091-1100.
- Hu, J, Herrick, C & Hodgins, KA 2004, 'Managing the multigenerational nursing team', *The Health Care Manager*, vol. 23, no. 4, pp. 334-40.
- Iedema, R, Sorensen, R, Manias, E, Tuckett, A, Piper, D, Mallock, N, Williams, A & Jorm, C 2008, 'Patients' and family members' experiences of open disclosure following adverse events', *International Journal for Quality in Health Care*, vol. 20, no. 6, 421-32.
- Jamtvedt, G., Young, JM, Kristoffersen, DT, O'Brien, MA & Oxman, AD 2006, 'Audit and feedback: effects on professional practice and health care outcomes', *Cochrane Database of Systematic Reviews*, vol. 2, pp. 1-83.

- Jha, AK, Prasopa-Plaizier, N, Larizgoitia, I & Bates, DW 2010, 'Patient safety research: an overview of the global evidence', *Quality and Safety in Health Care*, vol. 19, no. 1, pp. 42-47.
- Jimenez, R 2005, 'Implementing and evaluation a web-based close call reporting system at an urban hospital', PhD thesis, University of Texas.
- Jolley, J, Bendyk, H, Holaday, B, Lombardozzi, KA & Harmon, C 2007, 'Rapid response teams: do they make a difference?', *Dimensions of Critical Care Nursing*, vol. 26, no. 6, pp. 253-60.
- Kaldjian, LC, Jones, EW, Wu, BJ, Forman-Hoffman, VL, Levi, BH & Rosenthal, GE 2008, 'Reporting medical errors to improve patient safety: a survey of physicians in teaching hospitals', *Archives of Internal Medicine*, vol. 168, no. 1, pp. 40-46.
- Kessels-Habraken, M, De Jonge, J, Van der Schaaf, T & Rutte, C 2010, 'Prospective risk analysis prior to retrospective incident reporting and analysis as a means to enhance incident reporting behaviour: a quasi-experimental field study', *Social Science & Medicine*, vol. 70, no. 9, pp. 1309-16.
- Kievit, J, Krukerink, M & Marang-van de Mheen, PJ 2010, 'Surgical adverse outcome reporting as part of routine clinical care', *Quality and Safety in Health Care*, vol. 19, no. 6, pp. 1-5.
- Kim, DH 1993, 'The link between individual and organizational learning', *Sloan Management Review*, vol. 35, no. 1, pp. 37-50.
- Kingston, MJ, Evans, SM, Smith, BJ & Berry, JG 2004, 'Attitudes of doctors and nurses towards incident reporting: a qualitative analysis', *Medical Journal of Australia*, vol. 181, no. 1, pp. 36-39.

Kohn, LT, Corrigan, JM & Donaldson, MS 1999, *To err is human: Building a safer health system*, National Academy Press, Washington DC.

de Korne, DF, van Wijngaarden, JD, Hiddema, UF, Bleeker, FG, Pronovost, PJ & Klazinga, NS 2010, 'Diffusing aviation innovations in a hospital in The Netherlands', *Joint Commission Journal of Quality and Patient Safety*, vol. 36, no. 8, pp. 339-47.

Lake, FR & Landau, L 2007, 'Training our prevocational doctors', *Medical Journal of Australia*, vol. 186, no. 3, pp. 112-13.

Lam, CF, DeRue, DS, Karam, EP, & Hollenbeck, JR 2011, 'The impact of feedback frequency on learning and task performance: Challenging the "more is better" assumption', *Organisational Behaviour and Human Decision Process*, vol. 116, no. 2, pp. 217-28.

Lampel, J, Shamsie, J & Shapira, Z 2009, 'Experiencing the improbable: rare events and organizational learning', *Organization Science*, vol. 20, no. 5, pp. 835-45.

Lawton, R, & Parker, D 2002, 'Barriers to incident reporting in a healthcare system', *Quality and Safety in Healthcare*, vol. 11, pp. 15-18.

Leape, LL 1994, 'Error in medicine', *Journal of the American Medical Association*, vol. 272, no. 23, pp. 1851-57.

Lemley, D, Sudweeks, R, Howell, S, Laws, RD & Sawyer, O 2007, 'The effects of immediate and delayed feedback on secondary distance learners', *The Quarterly Review of Distance Education*, vol. 8, no. 3, pp. 251-60.

Leuthesser, L, Kohli, CS, & Harich, KR 1995, 'Brand equity: the halo effect measure', *European Journal of Marketing*, vol. 29, no. 4, pp. 57-66.

Levitt, B & March, JG 1988, 'Organizational Learning', *Annual Review of Sociology*, vol. 14, pp. 318-40.

Macilwain, C 1996, 'Nuclear watchdog tightens incident reporting rules', *Nature*, vol. 379, no. 6566, pp. 572.

Madsen, P.M 2009, 'These lives will not be lost in vain: organizational learning from disaster in U.S. coal mining', *Organization Science*, vol. 20, no. 5, pp. 861-75.

Madsen, P.M & Desai, V 2010, 'Failing to learn? The effects of failure and success on organizational learning in the global orbital launch vehicle industry', *Academy of Management Journal*, vol. 53, no. 3, pp. 451-76.

Mahajan, RP 2010, 'Critical incident reporting and learning', *British Journal of Anaesthesia*, vol. 105, no. 1, pp. 69-75.

Mattioli, G, Guida, E, Montobbio, G, Prato, AP, Carlucci, M, Cama, A, Boero, S, Michelis, MB, Castagnola, E, Rosati, U, & Jasonni, V 2012, 'Near-miss events are really missed! Reflections on incident reporting in a department of paediatric surgery', *Paediatric Surgery International*, vol. 28, pp. 405-10.

Mayer, J, Mooney, B, Gundlapalli, A, Harbarth, S, Stoddard, G.J, Rubin, M.A, Eutropius, L, Brinton, B & Samore, M.H 2011, 'Dissemination and sustainability of a hospital-wide hand hygiene program emphasizing positive reinforcement', *Infection Control and Hospital Epidemiology*, vol. 32, no. 1, pp. 59-66.

- McCulloch, P, Mishra, A, Handa, A, Dale, T, Hirst, G. & Catchpole, K 2009, 'The effects of aviation-style non-technical skills training on technical performance and outcome in the operating theatre', *Quality and Safety in Health Care*, vol. 18, no. 2, pp. 109-15.
- McHugh, ML 2012, 'Interrater reliability: the kappa statistic', *Biochemia Medica*, vol. 22, no. 3, pp. 276-82.
- Michailova, S, & Sidorova, E 2011, 'From group-based work to organisational learning: the role of communication forms and knowledge sharing', *Knowledge Management Research & Practice*, vol. 9, pp. 73-78.
- Miner, AS & Mezias, SJ 1996, 'Ugly duckling no more: Past and futures of organizational learning research', *Organization Science*, vol. 7, no. 1, pp. 88-99.
- Minnesota Department of Health 2009, *Adverse Health Care Events Reporting System: What have we learned?*, Minnesota Department of Health, St Paul.
- Moss, SE & Martinko, MJ 1998, 'The effects of performance attributions and outcome dependence on leader feedback behaviour following poor subordinate performance', *Journal of Organisational Behaviour*, vol. 19, no. 3, pp. 259-74.
- Naessens, J.M, O'Byrne, T.J, Johnson, M.G, Vansuch, M.B, McGlone, C.M, & Huddleston, J.M 2010, 'Measuring hospital adverse events: assessing inter-rater reliability and trigger performance of the Global Trigger Tool', *International Journal for Quality in Health Care*, vol. 22, no. 4, pp. 266-74.
- Nicolini, D, Waring, J & Mengis, J 2011, 'Policy and practice in the use of root cause analysis to investigate clinical adverse events: mind the gap', *Social Science & Medicine*, vol. 73, no. 2, pp. 217-25.

NSW Health 2007, *Incident Management*, NSW Health, Sydney, NSW.

Nuckols, TK, Bell, DS, Paddock, SM & Hilborne, LH 2009, 'Comparing process- and outcome-oriented approaches to voluntary incident reporting in two hospitals', *Joint Commission Journal of Quality and Patient Safety*, vol. 35, no. 3, pp. 139-45.

Pham, JC, Gianci, S, Battles, J, Beard, P, Clarke, JR, Coates, H, Donaldson, L, Eldridge, N, Fletcher, M, Goeschel, CA, Heitmiller, E, Hensen, J, Kelley, E, Loeb, J, Runciman, W, Sheridan, S, Wu, AW & Pronovost, PJ 2010, 'Establishing a global learning community for incident-reporting systems', *Quality and Safety in Health Care*, vol. 19, no. 5, pp. 446-51.

Porte, MC, Xeroulis, G, Reznick, RK & Dubrowski, A 2007, 'Verbal feedback from an expert is more effective than self-accessed feedback about motion efficiency in learning new surgical skills', *American Journal of Surgery*, vol. 193, no. 1, pp. 105-10.

Productivity Commission 2009, *Public and Private Hospitals*, Productivity Commission, Canberra.

Pronovost, PJ, Weast, B, Holzmuller, CG, Rosenstein, BJ, Kidwell, RP, Haller, KB, Feroli, ER, Sexton, JB & Rubin, HR 2003, 'Evaluation of the culture of safety: survey of clinicians and managers in an academic medical center', *Quality and Safety in Health Care*, vol. 12, pp. 405-10.

Pronovost, PJ, Nolan, T, Zeger, S, Miller, M & Rubin, H 2004, 'How can clinicians measure safety and quality in acute care?', *The Lancet*, vol. 363, no. 9414, pp. 1061-67.

Pronovost, PJ, Miller, MR & Wachter, RM 2006a, 'Tracking progress in patient safety: an elusive target', *Journal of the American Medical Association*, vol. 296, no. 6, pp. 696-99.

Pronovost, P, Needham, D, Berenholtz, S, Sinopoli, D, Chu, H, Cosgrove, S, Sexton, B, Hyzy, R, Welsh, R, Roth, G, Bander, J, Kepros, J & Goeschel, C 2006b, 'An intervention to decrease catheter-related bloodstream infections in the ICU', *New England Journal of Medicine*, vol. 355, no. 26, pp. 2725-32.

Qureshi, Z.H 2008, *A review of accident modelling approaches for complex critical sociotechnical systems*, Defence Science and Technology Organisation, Edinburgh, South Australia.

Raleigh, VS, Hussey, D, Seccombe, I & Qi, R 2009, 'Do associations between staff and inpatient feedback have the potential for improving patient experience? An analysis of surveys in NHS acute trusts in England', *Quality and Safety in Health Care*, vol. 18, no. 5, pp. 347-54.

Rasmussen, J 1997, 'Risk management in a dynamic society: a modelling problem', *Safety Science*, vol. 27, no. 2, pp. 183-213.

Reason, J 1990, *Human error*, Cambridge University Press, New York.

Reason, J 2000, 'Human error: models and management', *British Medical Journal*, vol. 320, no. 7237, pp. 768-70.

Reason, J 2002, 'Combating omission errors through task analysis and good reminders', *Quality and Safety in Health Care*, vol. 11, no. 1, pp. 40-4.

Reason, J 2004, 'Beyond the organisational accident: the need for "error wisdom" on the frontline', *Quality and Safety in Health Care*, vol. 13, pp. ii28-ii33.

- Reason, J 2005, 'Safety in the operating theatre – Part 2: human error and organisational failure', *Quality and Safety in Health Care*, vol. 14, no. 1, pp. 56-60.
- Reason, J 2012, 'James Reason: patient safety, human error, and Swiss cheese', *Quality Management in Health Care*, vol. 21, no. 1, pp. 59-63.
- Reason, J.T, Carthey, J & de Leval, M.R 2001, 'Diagnosing "vulnerable system syndrome": an essential prerequisite to effective risk management', *Quality in Health Care*, vol. 10, pp. ii21-ii25.
- Regenbogen, SE, Hirose, M, Imanaka, Y, Oh, EH, Fukuda, H, Gawande, AA, Takemura, T & Yoshihara, H 2009, 'A comparative analysis of incident reporting lag times in academic medical centres in Japan and the USA', *Quality and Safety in Health Care*, vol. 19, no. 6, pp. 1-4.
- Rego, P, Peterson, R, Callaway, L, Ward, M, O'Brien, C & Donald, K 2009, 'Using a structured clinical coaching program to improve clinical skills training and assessment, as well as teachers' and students' satisfaction', *Medical Teacher*, vol. 31, no. 12, pp. e586-e95.
- Ross, L 1977, The intuitive psychologist and his shortcomings: distortions in the attribution process. In Berkowitz, L (ed), *Advances in Experimental Social Psychology*, Academic Press, New York.
- Runciman, WB 2002, 'Lessons from the Australian Patient Safety Foundation: setting up a national patient safety surveillance system – is this the right model?', *Quality and Safety in Health Care*, vol. 11, no. 3, pp. 246-51.
- Runciman, W.B, Williamson, J.A.H, Deakin, A, Benveniste, K.A, Bannon, K, & Hibbert, P.D 2006, 'An integrated framework for safety, quality and risk management: an information and

incident management system based on a universal patient safety classification', *Quality and Safety in Health Care*, vol. 15, pp. i82-90.

Sari, AB, Sheldon, TA, Cracknell, A, Turnbull, A, Dobson, Y, Grant, C, Gray, W & Richardson, A 2007, 'Extent, nature and consequences of adverse events: results of a retrospective casenote review in a large NHS hospital', *Quality and Safety in Health Care*, vol. 16, no. 6, pp. 434-39.

Sax, HC, Browne, P, Mayewski, RJ, Panzer, RJ, Hittner, KC, Burke, RL & Coletta, S 2009, 'Can aviation-based team training elicit sustainable behavioural change?', *Archives of Surgery*, vol. 144, no. 12, pp. 1133-37.

Sharp, A 2010, 'A poor state of health: NSW hospitals the worst in the country', *Sydney Morning Herald*, 29 January, viewed 29 January < <http://www.smh.com.au/national/a-poor-state-of-health-nsw-hospitals-the-worst-in-the-country-20100128-n1ry.html>>.

Shaw, S & Fairhurst, D 2008, 'Engaging a new generation of graduates', *Education & Training*, vol. 50, no. 5, pp. 366-78.

Shekelle, PG 2002, 'Why don't physicians enthusiastically support quality improvement programmes?', *Quality and Safety in Health Care*, vol. 11, no. 1, pp. 6.

Sirriyeh, R, Lawton, R, Gardner, P & Armitage, G 2010, 'Coping with medical error: a systematic review of papers to assess the effects of involvement in medical errors on healthcare professionals' psychological well-being', *Quality and Safety in Health Care*, vol. 19, no. 6, pp. 1-8.

Smith, D & Elliott, D 2007, 'Exploring the barriers to learning from crisis: organizational learning and crisis', *Management Learning*, vol. 38, no. 5, pp. 519-38.

Soop, M, Fryksmark, U, Koster, M & Haglund, B 2009, 'The incident of adverse events in Swedish hospitals: a retrospective medical record review study', *International Journal for Quality in Health Care*, vol. 21, no. 4, pp. 285-91.

Sorensen, R, Iedema, R, Piper, D, Manias, E, Williams, A & Tuckett, A 2010, 'Disclosing clinical adverse events to patients: can practice inform policy?', *Health Expectations*, vol. 13, no. 2, pp. 148-59.

Spigelman, AD & Swan, J 2005, 'Review of the Australian incident monitoring system', *ANZ Journal of Surgery*, vol. 75, no. 8, pp. 657-61.

Sydney South West Area Health Service (SSWAHS) 2008, *Your rights and responsibilities*, SSWAHS, Liverpool, NSW.

Sydney South West Area Health Service (SSWAHS) 2010, *Workforce Profile, Sydney South West Area Health Service*, SSWAHS, Liverpool, NSW.

Stanhope, N, Crowley-Murphy, M, Vincent, C, O'Conner, AM & Taylor-Adams, SE 1999, 'An evaluation of adverse incident reporting', *Journal of Evaluation in Clinical Practice*, vol. 5, no. 1, pp. 5-12.

Studdert, DM, Mello, MM, Gawande, AA, Gandhi, TK, Kachalia, A, Yoon, C, Puopolo, AL & Brennan, TA 2006, 'Claims, errors, and compensation payments in medical malpractice litigation', *New England Journal of Medicine*, vol. 354, no. 19, pp. 2024-33.

Taitz, J, Genn, K, Brooks, B, Ross, D, Ryan, K, Shumack, B, Burrell, T & Kennedy, P 2010, 'System-wide learning from root cause analysis: a report from the New South Wales Root Cause Analysis Review Committee', *Quality and Safety in Health Care*, vol. 19, no. 6, pp. 1-5.

Tamuz, M, Thomas, EJ & Franchois, KE 2004, 'Defining and classifying medical error: lessons for patient safety reporting systems', *Quality and Safety in Health Care*, vol. 13, no. 1, pp. 13-20.

Taylor-Adams, S & Vincent, C 2001, *Systems analysis of clinical incidents: the London protocol*, Imperial College London, viewed 21 May 2015, <
https://www1.imperial.ac.uk/resources/C85B6574-7E28-4BE6-BE61-E94C3F6243CE/londonprotocol_e.pdf>.

The Commonwealth Fund 2006, *Deaths Due to Surgical or Medical Mishaps per 100,000 Population in 2004*, The Commonwealth Fund, viewed 22 November 2010, <
<http://www.commonwealthfund.org/Content/Charts/Chartbook/Multinational-Comparisons-of-Health-Systems-Data--2006/D/Deaths-Due-to-Surgical-or-Medical-Mishaps-per-100-000-Population-in-2004.aspx>>.

Tighe, CM, Woloshynowch, M, Brown, R, Wears, B & Vincent, C 2006, 'Incident reporting in one UK accident and emergency department', *Accident and Emergency Nursing*, vol. 14, no. 1, pp. 27-37.

Tucker, A.L & Edmondson, A.C 2003, 'Why hospitals don't learn from failures: organizational and psychological dynamics that inhibit system change', *California Management Review*, vol. 45, no. 2, pp. 55-72.

Ursprung, R, Gray, JE, Edwards, WH, Horbar, JD, Nickerson, J, Pslek, P, Shiono, PH, Suresh, GK & Goldmann, DA 2005, 'Real time patient safety audits: improving safety every day', *Quality and Safety in Health Care*, vol. 14, pp. 284-89.

- Upton, G & Cook, I 2006, *Oxford Dictionary of Statistics*, 2nd edn, Oxford University Press, Oxford.
- Vincent, C.A 2004, 'Analysis of clinical incidents: a window on the system not a search for root causes', *Quality and Safety in Health Care*, vol. 13, no. 4, pp. 242-3.
- Vincent, C, Stanhope, N & Crowley-Murphy, M 1999, 'Reasons for not reporting adverse incidents: an empirical study', *Journal of Evaluation in Clinical Practice*, vol. 5, no. 1, pp. 13-21.
- Vincent, C, Taylor-Adams, S & Stanhope, N 1998, 'Framework for analysing risk and safety in clinical medicine', *British Medical Journal*, vol. 316, no. 7138, pp. 1154-7
- Wallace, L 2010, 'Feedback from reporting patient safety incidents – are NHS trusts learning lessons?', *Journal of Health Services Research and Policy*, vol. 15, no. 1, pp. 75-78.
- Wang, CL & Ahmed, PK 2003, 'Organisational learning: A critical review', *The Learning Organization*, vol. 10, no. 1, pp. 8-17.
- Waring, JJ 2004, 'A qualitative study of the intra-hospital variations in incident reporting', *International Journal for Quality in Health Care*, vol. 16, no. 5, pp. 347-52.
- Waring, JJ 2005, 'Beyond blame: cultural barriers to medical incident reporting', *Social Science & Medicine*, vol. 60, no. 9, pp. 1927-35.
- Waring, J, Currie, G, Crompton, A, & Bishop, S 2013, 'An exploratory study of knowledge brokering in hospital settings: Facilitating knowledge sharing and learning for patient safety?', *Social Science & Medicine*, vol. 98, pp. 79-86.

- Wilson, RM, Runciman, WB, Gibberd, RW, Harrison, BT, Newby, L & Hamilton, JD 1995, 'The quality in Australian health care study', *Medical Journal of Australia*, vol. 163, no. 9, pp. 458-71.
- Wilson, KA 2007, 'Does safety culture predict clinical outcomes?', PhD thesis, University of Central Florida.
- Wu, AW, Pronovost, P & Morlock, L 2002, 'ICU incident reporting systems', *Journal of Critical Care*, vol. 17, no. 2, pp. 86-94.
- Yang, J 2007, 'The impact of knowledge sharing on organizational learning and effectiveness', *Journal of Knowledge Management*, vol. 11, no. 2, pp. 83-90.
- Yarris, LM, Linden, JA, Gene Hern, H, Lefebvre, C, Nestler, DM, Fu, R, Choo, E, LaMantia, J & Brunett, P 2009, 'Attending and resident satisfaction with feedback in the emergency department', *Academic Emergency Medicine*, vol. 16, pp. S76-S81.

APPENDICES

Appendix 1: HREC Approval – South Western Sydney Local Health District



Health
South Western Sydney
Local Health Network

Human Research Ethics Committee

Locked Bag 7017, LIVERPOOL BC, NSW, 1871
Phone: 02 9612 0614

Facsimile: 02 9612 0611

29 June 2011

Mr Paul Miles
Director of Corporate Services and Finance
Fairfield Hospital

Dear Paul

Project title: Does providing short-cycle feedback produce organisational learning?
Project number: 11/133
HREC Reference: HREC/11/LPOOL/133

Thank you for submitting the above project with the above documents which was first considered by the SWSLHN Human Research Ethics Committee on 27th June 2011. This HREC is constituted and operates in accordance with the National Health and Medical Research Council's *National Statement on Ethical Conduct in Research Involving Humans* and the *CPMP/ICH Note for Guidance on Good Clinical Practice*.

I am pleased to advise that the Committee has granted ethical approval of the above project on condition that the researchers retain the data for seven years and add the Ethics fax number 9612 0611 to the Participant Information Sheet.

The following documentation has been reviewed and approved:

- o Ethics Application Form (Low & Negligible Risk), submission code, AU/6/5959013
- o Participant Information Sheet, Version 1, dated 9 May 2011
- o Consent Form, Version 1, dated 9 May 2011
- o Patient Safety & Incident Learning Questionnaire (1) and (2), Version 1, dated 7 May 2011

Approval is valid for the following Site only:

- Fairfield Hospital

Please note the following conditions of approval:

1. The Principal Investigator will immediately report anything which might warrant review of ethical approval of the project in the specified format, including:
 - any serious or unexpected adverse events; and
 - unforeseen events that might affect continued ethical acceptability of the project.

2. The Principal Investigator will report proposed changes to the research protocol, conduct of the research, or length of HREC approval to the HREC in the specified format, for review.
3. The Principal Investigator will inform the HREC, giving reasons, if the project is discontinued before the expected date of completion.
4. The Principal Investigator will provide an annual report to the HREC and at completion of the study in the specified format.
5. The Principal Investigator must reassure participants about confidentiality of the data.

HREC approval is valid for 12 months and a progress report will be required by 30th May, 2012.

Should you have any queries about your project please contact Ms Righa Saroo, HREC Executive Officer on the telephone number listed above. The HREC Terms of Reference, Standard Operating Procedures, membership and standard forms are available from the SWSLHN website:

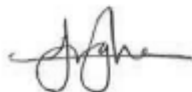
<http://www.swsahs.nsw.gov.au/areas/ethics/default.asp>

You are reminded that this letter constitutes ethical approval only. You must not commence this research project until separate site specific authorisation has been granted.

Please quote the Local HREC reference **11/133** in all correspondence.

The HREC wishes you every success in your research

Yours faithfully



for

Professor Hugh Dickson
Chairperson
SWSLHN Human Research Ethics Committee

Appendix 2: HREC Approval – University of Tasmania

Social Science Ethics Officer
Private Bag 01 Hobart
Tasmania 7001 Australia
Tel: (03) 6226 2763
Fax: (03) 6226 7148
Katherine.Shaw@utas.edu.au



HUMAN RESEARCH ETHICS COMMITTEE (TASMANIA) NETWORK

18 July 2011

Assoc Prof Jeff Patrick
Royal Prince Alfred Hospital
Level 11, King George V Building
Sydney

Student Researcher: Paul Miles

Dear Assoc Prof Patrick

Re: PRIOR APPROVAL ETHICS APPLICATION APPROVAL
Ethics Ref: H0011969 - Does providing short-cycle feedback produce organisational learning?

We are pleased to advise that acting on a mandate from the Tasmania Social Sciences HREC, the Chair of the committee considered and approved the above project on 18 July 2011.

Please note that this approval is for four years and is conditional upon receipt of an annual Progress Report. Ethics approval for this project will lapse if a Progress Report is not submitted.

The following conditions apply to this approval. Failure to abide by these conditions may result in suspension or discontinuation of approval.

1. It is the responsibility of the Chief Investigator to ensure that all investigators are aware of the terms of approval, to ensure the project is conducted as approved by the Ethics Committee, and to notify the Committee if any investigators are added to, or cease involvement with, the project.
2. Complaints: If any complaints are received or ethical issues arise during the course of the project, investigators should advise the Executive Officer of the Ethics Committee on 03 6226 7479 or human.ethics@utas.edu.au.
3. Incidents or adverse effects: Investigators should notify the Ethics Committee immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.

A PARTNERSHIP PROGRAM IN CONJUNCTION WITH THE DEPARTMENT OF HEALTH AND HUMAN SERVICES

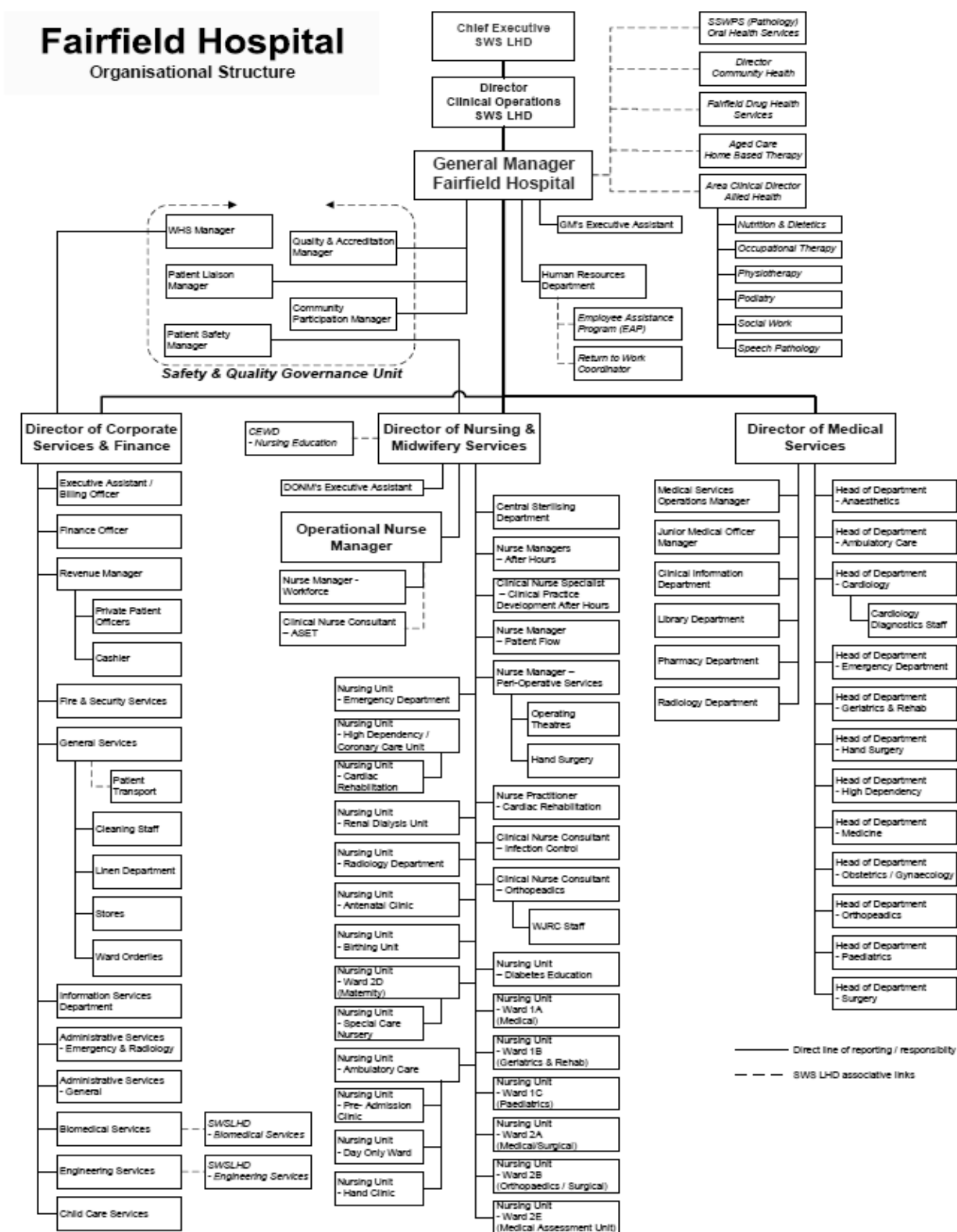
4. Amendments to Project: Modifications to the project must not proceed until approval is obtained from the Ethics Committee. Please submit an Amendment Form (available on our website) to notify the Ethics Committee of the proposed modifications.
5. Annual Report: Continued approval for this project is dependent on the submission of a Progress Report by the anniversary date of your approval. You will be sent a courtesy reminder closer to this date. Failure to submit a Progress Report will mean that ethics approval for this project will lapse.
6. Final Report: A Final Report and a copy of any published material arising from the project, either in full or abstract, must be provided at the end of the project.

Yours sincerely

A handwritten signature in black ink, appearing to read 'K. Shaw', with a stylized flourish at the end.

Katherine Shaw
Acting Executive Officer

Appendix 3: Fairfield Hospital Organisational Chart



Appendix 4: Participant Information Sheet

Fairfield Hospital



Health
South Western Sydney
Local Health Network

Name
Title
Organisation
Address
SUBURB NSW POSTCODE

Dear [Salutation] [Surname],

Re: Does providing short-cycle feedback produce organisational learning?

Invitation

You are invited to participate in a research study into the effects of short-cycle feedback (e.g. within 24 hours) on incident reporting systems and organisational learning. I will be conducting the study within two (2) Wards of Fairfield Hospital.

The two propositions derived from the main research question are:

1. Providing short-cycle feedback produces single loop learning evidenced by lower incident rates, higher reporting rates, and changes in reporting behaviour.
2. Providing short-cycle feedback produces double loop learning evidenced by changes in staff perceptions of the usefulness of reporting systems.

1. 'What is the purpose of this study?'

This study aims to explore the learning effects of short-cycle feedback from incidents entered into the Incident Information Management System (IIMS). Feedback provided in a timely manner by an experienced clinician is expected to educate the participant, which could enhance knowledge and skills that can be applied in a practical setting. Consequently, the effectiveness of the feedback provided may promote utilisation of IIMS as an educational tool.

Furthermore, this study aims to overcome barriers to incident reporting; particularly the lag with feedback provided and the participant's perceived lack of utility. It is anticipated that the provision of formative feedback within a short-cycle timeframe, will increase user satisfaction, compared to the variable (and often delayed) timeframes of feedback common in existing incident reporting systems.

The results of this proposal will contribute to the theory of organisational learning, specifically single-loop and double-loop learning, whilst also exploring the effects of short-cycle feedback on barriers to incident reporting.

2. 'Why have I been invited to participate in this study?'

You are eligible to participate in this study because you are part of the multidisciplinary team that is responsible for safe and effective patient care. Accordingly, at times you are required to enter any incidents (adverse or near-miss) into the IIMS database. Hence, you have prior knowledge on how to operate the IIMS database and the benefits of the proposed study (e.g. learning from incidents, improved patient safety) may have implications on incident reporting practices.

Fairfield Hospital
Cnr Prairievale Road and Polding Street
Prairiewood NSW 2176

Mailing Address / All Correspondence
PO Box 5, Fairfield NSW 1860
Tel 02 9616 8111 Fax 02 9616 8240

Does providing short-cycle feedback produce organisational learning?

South Western Sydney Local Health Network
ABN 46 738 965 845

Bangala Building, Liverpool Hospital Eastern Campus
Locked Bag 7017 Liverpool BC 1871
Tel 02 9828 5700 Fax 02 9828 5769
Website www.health.nsw.gov.au/swslhn/

Information Sheet – Version 1 | 9 May 2011
Page 1 of 2

3. 'What does this study involve?'

If you choose to participate in this study you will be asked to complete two surveys about incident reporting systems. During the study period you will also be asked whether you observed any incidents during your shift. Additionally, if you report an incident into IIMS during the study period an experienced clinician (e.g. Clinical Nurse Consultant or Educator) will approach you to provide formative feedback.

It is important that you understand that your involvement in this study is voluntary. While I would be pleased to have you participate, I respect your right to decline. There will be no consequences to you if you decide not to participate. If you decide to discontinue participation at any time, you may do so without providing an explanation. All information will be treated in a confidential manner, and your name will not be used in any publication arising out of the research. All of the research will be kept in a locked cabinet in my office and on a password protected electronic storage device. There are no financial costs to you for your involvement in this study.

4. What if I have questions about this research?

If you would like to discuss any aspect of this study please feel free to contact either me via telephone on 9616 8105. I would welcome the opportunity to discuss any aspect of the research with you.

This study has received ethics approval by the South Western Sydney Area Health Service – Human Research Ethics Committee (EC00136) and reciprocal ethics approval by the (University of Tasmania) Tasmanian Health & Medical Human Research Ethics Committee (EC00337).

If you have concerns about the conduct of this study you are welcome to contact the Ethics Secretariat (South Western Sydney Local Health Network), Locked Bag 7017, Liverpool BC, NSW, 1871, or via phone on (02) 9612 0614 or email riqha.saroo@sswahs.nsw.gov.au. The Executive Secretariat is the person nominated to address concerns raised by study participants.

Thank you for taking the time to consider this study. If you wish to participate, please sign the attached consent form. Your signature on the consent form indicates that, having read the information provided above, you have decided to participate in this study. This information sheet is for you to keep.

Yours sincerely,

Paul Miles
Principal Investigator

Date:

Appendix 5: Participant Consent Form

Fairfield Hospital



Health
South Western Sydney
Local Health Network

Name
Title
Organisation
Address
SUBURB NSW POSTCODE

CONSENT FORM

Title of Study: Does providing short-cycle feedback produce organisational learning?

1. I have read and understood the 'Information Sheet' for this study, which explains why I have been selected, the aims of the study, and the possible risks, which has been explained to me to my satisfaction.
2. Before signing this Consent Form, I have been given the opportunity to ask any questions relating to any possible physical and mental harm I might suffer as a result of my participation. I have received satisfactory answers to any questions that I have asked.
3. My decision whether or not to participate will not prejudice my present or future employment or relationship with South Western Sydney Health Network or any other institution co-operating in this study. If I decide to participate, I am free to withdraw my consent and to discontinue my participation at any time without prejudice, and if I so wish, may request that any data I have supplied to date be withdrawn.
4. I understand that the study focuses on incident reporting systems, and involves the recording of incidents observed during a work shift and the provision of short-cycle feedback, and that this study is six (6) months in duration.
5. I understand that participation involves the provision of feedback directly to me regarding an incident I reported, regardless of the severity of the incident.
6. I understand that all research data will be securely stored for five years [or at least five years], and will then be destroyed [or will be destroyed when no longer required].
7. I agree that research data gathered from me for the study may be published provided that I cannot be identified as a participant.
8. I understand that the researcher will maintain my confidentiality and that any information I supply to the researcher(s) will be used only for the purposes of the research.
9. I understand that if I have any questions relating to my participation in this research, I may contact the principal investigator, Mr Paul Miles on telephone (02) 9616 8105 who will be happy to answer them.
10. I acknowledge receipt of a copy of this Consent Form and the Information Sheet.

Fairfield Hospital
Cnr Prairievale Road and Polding Street
Prairiewood NSW 2176

Mailing Address / All Correspondence
PO Box 5, Fairfield NSW 1860
Tel 02 9616 8111 Fax 02 9616 8240

South Western Sydney Local Health Network
ABN 46 738 965 845

Bangala Building, Liverpool Hospital Eastern Campus
Locked Bag 7017 Liverpool BC 1871
Tel 02 9828 5700 Fax 02 9828 5769
Website www.health.nsw.gov.au/swslhn/

Does providing short-cycle feedback produce organisational learning?

*Consent Form – Version 1 | 9 May 2011
Page 1 of 2*

If you have concerns about the conduct of this study you are welcome to contact the Ethics Secretariat (South Western Sydney Local Health Network), Locked Bag 7017, Liverpool BC, NSW, 1871, or via phone on (02) 9612 0614 or email riqha.saroo@sswahs.nsw.gov.au. The Executive Secretariat is the person nominated to address concerns raised by study participants.

Signature of Participant:

Name of Participant:

Date:

Signature of Witness:

Name of Witness:

Date:

Statement by Investigator

☐

I have explained the study and the implications of participation in it to this participant and I believe that the consent is informed and that he / she understands the implications of participation

If the Investigator has not had an opportunity to talk to participants prior to them participating, the following must be ticked.

☐

The participant has received the Information Sheet where my details have been provided so participants have the opportunity to contact me prior to consenting to participate in this project

Signature of Investigator:

Name of Investigator: Paul Miles

Date:

Appendix 6: Pre-Intervention Questionnaire

Questionnaire (1) – Version 1 | 07 May 2011

PATIENT SAFETY & INCIDENT LEARNING QUESTIONNAIRE

SECTION 1 – RESPONDENT INFORMATION

Alias:

(First 4 letters of your Father's name and first 4 letters of your favourite superhero)

Profession: Medicine ☐ Nursing ☐ Allied Health ☐
 Support / Hotel ☐ Administration ☐ Other ☐

SECTION 2 – DEFINITIONS

Please take a few moments to read the following definitions, as these will be helpful to you in answering the questions.

Adverse Event	A reportable incident that must have had serious or major clinical consequences and the probability of recurrence.
Error	All those occasions in which a planned sequence of mental or physical activities fails to achieve its intended outcome.
IIMS	The Incident Information Management System (IIMS), which is the national incident reporting system used by the Australian healthcare system.
Incident	Any unplanned event which results in, or has the potential to result in harm to a patient.
Incident Learning	The organisation's ability to identify, report, and investigate incidents, and to take corrective actions that improve the patient care system and reduce the risk of recurrence.
Near Miss	Incidents that do not result in an adverse outcome.
Organisation	Please interpret each question in the context of the organisation (e.g. Hospital) in which you work.

Please read each question carefully, as some are worded "negatively" and some are worded "positively."

Please turn over to begin the questionnaire.

Does providing short-cycle feedback produce organisational learning?

Page 1 of 9

SECTION 3 – PATIENT SAFETY

For each of the following statements, please indicate to what extent you agree or disagree with the statement, or check "No Opinion" if you have no knowledge or experience on which to base an opinion:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	No Opinion
1. I believe patient safety is taken seriously by the organisation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I am able to identify an incident if I observed one.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I know my responsibilities when reporting an incident.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I am provided with adequate resources (personnel, budget, and equipment) to provide safe patient care.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. In my organisation, disregarding policy and procedures is rare.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Senior management provides a climate that promotes patient safety.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. In my organisation, anyone who intentionally violates standard procedures or safety rules is swiftly corrected.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. My organisation takes the time to identify and assess risks to patients.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Asking for help is a sign of incompetence.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. If people find out that I made a mistake, I will be disciplined.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Senior management has a good idea of the kinds of mistakes that actually occur in this facility.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. My organisation does a good job managing risks to ensure patient safety.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. My organisation recognises individual safety achievement through rewards and incentives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	No Opinion
14. If I make a mistake that has significant consequences and nobody notices, I do not tell anyone about it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. It is hard for health care professionals to hide serious mistakes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. I am rewarded for taking quick action to identify a serious mistake.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Good communication flow exists up the chain of command regarding patient safety issues.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. I will suffer negative consequences if I report a patient safety problem.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. In the last year, have observed an incident, regardless of severity or outcome that could have been prevented.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. In the last year, I have witnessed a co-worker do something that appeared to me to be unsafe for the patient.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. In the last year, I have done something that was not safe for the patient.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Individuals in my organisation are willing to report behaviour which is unsafe for patient care.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. I have enough time to complete patient care tasks safely.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. I am asked to cut corners to get the job done.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Co-workers who make serious mistakes are usually punished.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. I have made significant errors in my work that I attribute to my lack of knowledge on patient safety.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Please rate the organisation's overall level of patient safety:						
<input type="checkbox"/> Very Poor <input type="checkbox"/> Poor <input type="checkbox"/> Average <input type="checkbox"/> Good <input type="checkbox"/> Very Good						

SECTION 4 – INCIDENT LEARNING

For each of the following statements, please indicate to what extent you agree or disagree with the statement, or check "No Opinion" if you have no knowledge or experience on which to base an opinion:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	No Opinion
28. Learning from incidents is an important policy objective of my organisation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29. The program for learning from incidents in my organisation improves patient care.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. In my organisation, people tend to cover up mistakes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. People in leadership positions are committed to learning from incidents.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. In my organisation there is no blame or stigma attached to reporting an incident.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. I would feel quite comfortable reporting an incident in which I made an error or omission.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. I learn from my own incidents, but not from incidents involving others.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. I would know how to respond appropriately if I saw an incident occur.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. Secrecy between different departments, specialisations or functions makes it difficult to learn from incidents.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37. Incidents in my organisation are investigated impartially and objectively.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38. I have learned how to do my own job better by learning about mistakes made by my co-workers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. My organisation allocates sufficient resources to incident investigations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. Incidents do not happen in my organisation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	No Opinion
41. Recommendations from incident investigations are acted upon.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42. My organisation turns lessons learned from incidents into actions that improve the patient care system.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43. My organisation treats incidents as learning opportunities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44. My organisation ignores incidents as long as no one gets hurt.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45. Lessons learned from incident investigations are communicated to staff.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46. Differences between departments, specialisations or functions make it difficult to improve the system.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47. The program for learning from incidents in my organisation improves operational effectiveness.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48. My organisation rewards or recognises individuals and teams for effective incident reporting and investigation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49. My organisation accepts that people make mistakes and puts the focus of incident investigations on system improvement.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50. My organisation shares learning from incidents with similar organisations within the health care system.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51. The workload and paperwork involved in learning from incidents outweighs the benefits.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
52. I feel that incidents present learning opportunities that can improve daily work tasks and patient safety.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
53. Please rate the organisation's overall ability to learn from incidents:						
<input type="checkbox"/> Very Poor <input type="checkbox"/> Poor <input type="checkbox"/> Average <input type="checkbox"/> Good <input type="checkbox"/> Very Good						

SECTION 5 – PERSONAL EXPERIENCE

54. Can you please provide an estimate of the <i>average number of incidents in a year</i> that you have experienced, either as a participant or observer?	
55. About how many of these incidents were reported?	
56. About how many of the reported incidents were near misses?	
57. About how many of the reported incidents were investigated?	
58. Please rate your overall experience with learning from incidents: <div style="display: flex; justify-content: space-between; padding: 5px;"> <input type="checkbox"/> Very Positive <input type="checkbox"/> Neutral <input type="checkbox"/> Very Negative </div> <div style="display: flex; justify-content: space-between; padding: 5px;"> <input type="checkbox"/> Positive <input type="checkbox"/> No Experience <input type="checkbox"/> Negative </div>	

Please rate the following factors in terms of their importance to you as reasons why you would *not* report an incident in this organisation:

	Extremely	Very Important	Quite Important	Somewhat	Slightly	Not At All
59. Fear of discipline.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
60. Concern about the reputation of the organisation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
61. Concern about my reputation: I don't want to be seen as "accident-prone."	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
62. Desire to just carry on with the job.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
63. Desire not to have my name on an incident report.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
64. Avoidance of "red tape" associated with incident reports and investigations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
65. Because reporting an incident would be "telling on" my colleagues.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
66. I didn't think the incident was important enough to report.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
67. Too busy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
68. Lack of organisational support.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

69. Please describe a memorable incident that you have been involved in?

70. Please summarise what you learned from this incident?

71. In your opinion, what do you think the organisation learned from this incident?

SECTION 6 – INCIDENT REPORTING SYSTEM

For each of the following statements, please indicate to what extent you agree or disagree with the statement, or check "No Opinion" if you have no knowledge or experience on which to base an opinion:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	No Opinion
72. I understand the definition of an "incident".	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
73. I understand the definition of an "adverse event".	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
74. I understand the definition of a "near miss".	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
75. The IIMS incident reporting system makes it clear the definition between an "adverse event" and a "near miss".	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
76. I report adverse events via IIMS.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
77. I report near misses via IIMS.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
78. I am satisfied with the training I received regarding how to use IIMS.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
79. I verbally advise my supervisor / line-manager about an incident I have reported into IIMS.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
80. I feel supported by my supervisor / line-manager when reporting an incident.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
81. I have adequate access to IIMS.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
82. I feel I would benefit from further training regarding how to use IIMS.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
83. I have received training in incident reporting but not in incident investigations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
84. Please rate your satisfaction with IIMS:						
<input type="checkbox"/> Very Poor <input type="checkbox"/> Poor <input type="checkbox"/> Average <input type="checkbox"/> Good <input type="checkbox"/> Very Good						

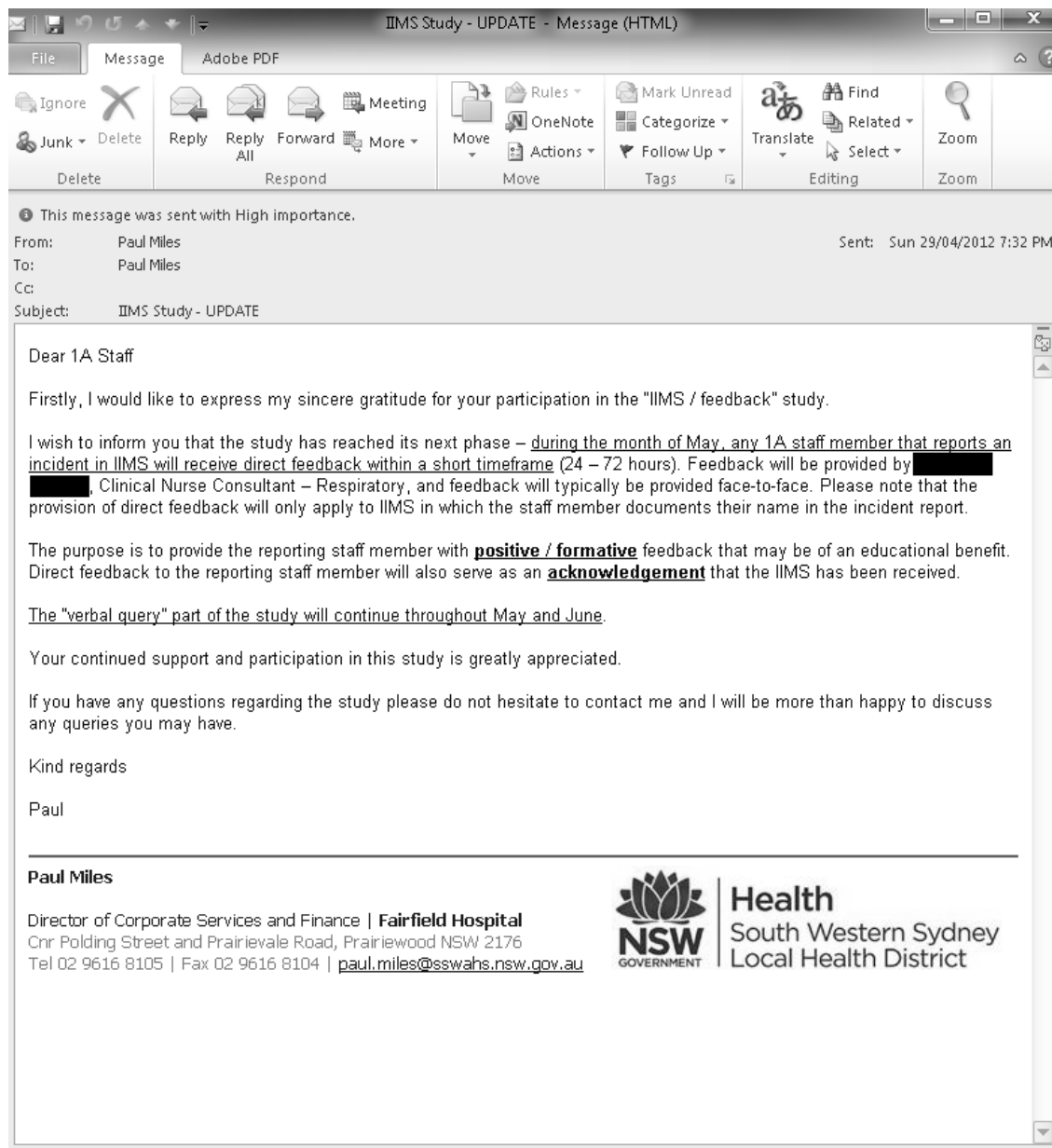
SECTION 7 – FEEDBACK FROM INCIDENTS

For each of the following statements, please indicate to what extent you agree or disagree with the statement, or check "No Opinion" if you have no knowledge or experience on which to base an opinion:

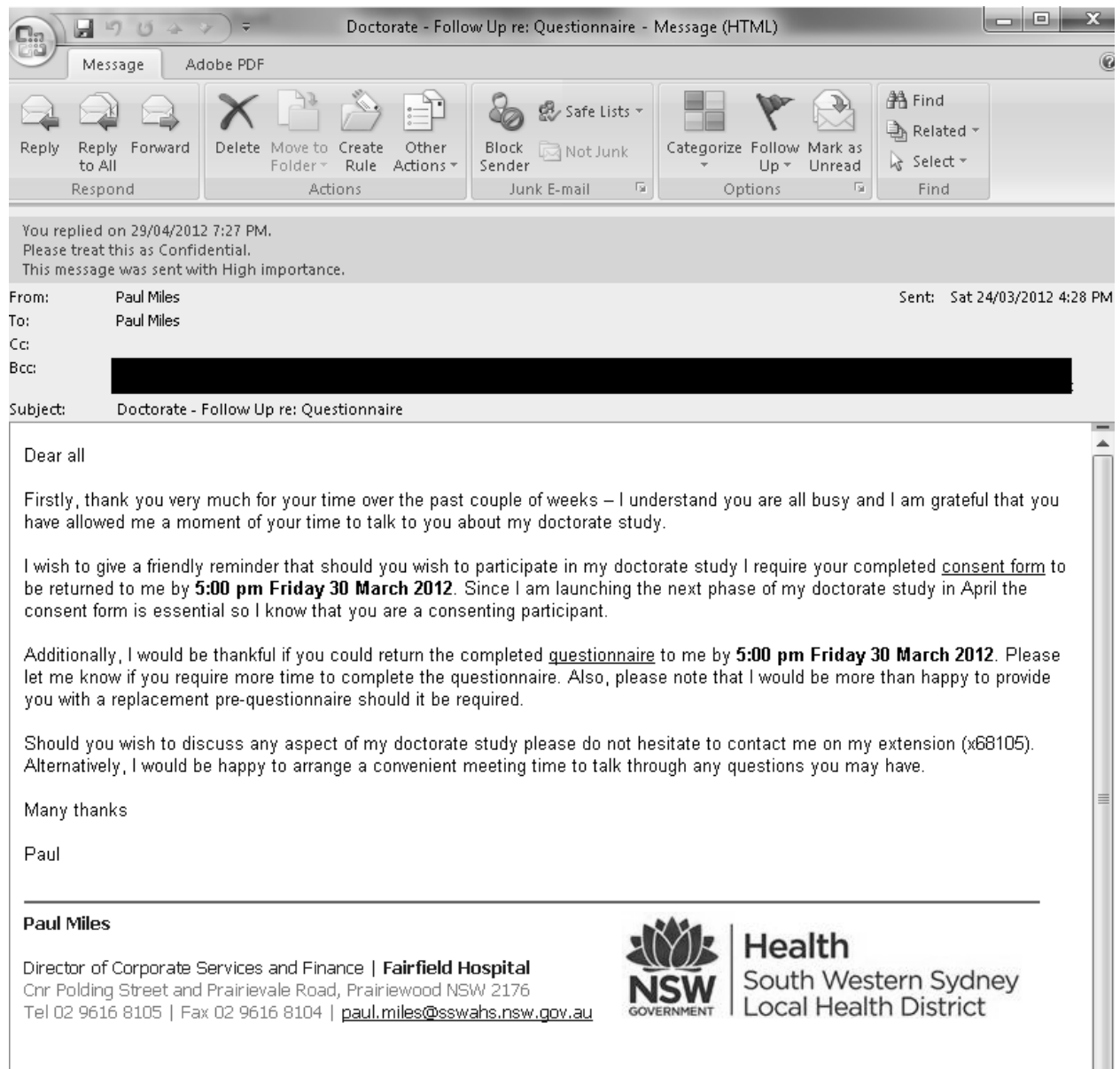
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	No Opinion
85. Feedback is provided to me from an incident that I have submitted as part of my daily work tasks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
86. I am satisfied with the feedback provided to me from an incident I have reported.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
87. I am satisfied with the <i>quantity</i> of feedback I receive.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
88. I am satisfied with the <i>quality</i> of feedback I receive.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
89. I am satisfied with the <i>timeliness</i> of feedback I receive.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
90. The feedback provided to me improves my awareness about patient safety.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
91. I believe the feedback I receive improves my job performance and / or skills.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

THANK YOU FOR YOUR PARTICIPATION!

Appendix 7: Email re: Introduction of Feedback Specialist to Control Ward



Appendix 8: Follow-up Email re: Pre-Intervention Questionnaire



Appendix 9: Post-Intervention Questionnaire

Questionnaire (2) – Version 1 | 07 May 2011

PATIENT SAFETY & INCIDENT LEARNING QUESTIONNAIRE

SECTION 1 – RESPONDENT INFORMATION

Alias:

(First 4 letters of your Father's name and first 4 letters of your favourite superhero)

(NB: Please use the same alias you used for the first questionnaire)

Profession: ☐ Medical ☐ Nursing ☐ Allied Health
☐ Support / Hotel ☐ Administration

SECTION 2 – DEFINITIONS

Please take a few moments to read the following definitions, as these will be helpful to you in answering the questions.

Adverse Event	A reportable incident that must have had serious or major clinical consequences and the probability of recurrence
Error	All those occasions in which a planned sequence of mental or physical activities fails to achieve its intended outcome
IIMS	The Incident Information Management System (IIMS), which is the national incident reporting system used by the Australian healthcare system
Incident	Any unplanned event which results in, or has the potential to result in harm to a patient
Incident Learning	The organisation's ability to identify, report, and investigate incidents, and to take corrective actions that improve the patient care system and reduce the risk of recurrence
Near Miss	Incidents that do not result in an adverse outcome
Organisation	Please interpret each question in the context of the organisation (e.g. Hospital) in which you work

Please read each question carefully, as some are worded "negatively" and some are worded "positively."

Please turn over to begin the questionnaire.

Does providing short-cycle feedback produce organisational learning?

Page 1 of 3

SECTION 3 – FEEDBACK FROM INCIDENTS

For each of the following statements, please indicate to what extent you agree or disagree with the statement, or check "No Opinion" if you have no knowledge or experience on which to base an opinion:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	No Opinion
1. Feedback is provided to me from an incident that I have submitted as part of my daily work tasks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I am satisfied with the feedback provided to me from an incident I have reported.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I am satisfied with the <i>quantity</i> of feedback I receive.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I am satisfied with the <i>quality</i> of feedback I receive.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I am satisfied with the <i>timeliness</i> of feedback I receive.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. The feedback provided to me improves my awareness about patient safety.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I believe the feedback I receive improves my job performance and / or skills.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I was satisfied with the availability of the feedback specialist.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Please rate your overall experience with learning from feedback provided by the feedback specialist:						
<input type="checkbox"/> Very Poor <input type="checkbox"/> Poor <input type="checkbox"/> Average <input type="checkbox"/> Good <input type="checkbox"/> Very Good						

SECTION 4 – SHORT-CYCLE FEEDBACK

For each of the following statements, please indicate to what extent you agree or disagree with the statement, or check "No Opinion" if you have no knowledge or experience on which to base an opinion:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	No Opinion
10. I reported an incident in IIMS after I acknowledged the incident via the verbal querying process.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. The short-cycle feedback improved my job satisfaction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. I want to receive short-cycle feedback on a permanent basis.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. I feel the verbal querying (regarding incidents observed) was disruptive.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. I observed improvements in patient safety awareness in my Ward / Department.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. I observed improvements in work practices in my Ward / Department.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. I feel that my organisation turns lessons learned from incidents into actions, which improves safety.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. I feel that feedback provided to me was practical.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. I would be more inclined to report an incident if I were to directly receive short-cycle feedback.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

THANK YOU FOR YOUR PARTICIPATION!

Once completed, please return this questionnaire to the mail box of Mr Paul Miles, which is located in General Administration. Alternatively, you may email a scanned copy of this questionnaire to: paul.miles@sswahs.nsw.gov.au, or return the questionnaire to the Clinical Support Officer (CSO) on your Ward.

Please return your completed questionnaire by **Friday 27 July 2012**.

Appendix 10: Verbal Query Instructions

You have kindly agreed to assist with the collection of data for a project entitled: **Does providing short-cycle feedback produce organisational learning?**

This project has been approved by the South Western Sydney Local Health District Human Research Ethics Committee (Ref: HREC/11/LPOOL/133) and the University of Tasmania Social Sciences Human Research Ethics Committee (Ref: H0011989).

The student researcher for the project is Mr Paul Miles (Director of Corporate Services and Finance, Fairfield Hospital) and the supervisor is Associate Professor Jeff Patrick, Faculty of Business, University of Tasmania.

This document is to provide guidance in relation to the collection of data, which is as follows:

What should be considered an incident?

- "Any unplanned event which results in, or has the potential to result in harm to a patient, staff or visitor".

What do I do?

- You are required to ask each member of the staff on-duty:
 - i) "How many incidents in this ward have you observed on your shift?"
 - ii) "Can you briefly describe the incidents you have observed?" (i.e. fall; med. error)

Who do I ask?

- You are required to ask each staff member that works on the Ward, which includes:
 - i) Nursing staff
 - ii) Medical staff
 - iii) Allied health staff
 - iv) Administration staff
 - v) Support / Hotel staff

When do I ask this?

- You are required to ask each staff member towards the end of the staff member's shift.
- For those staff that are not always present on the Ward for their entire shift (i.e. medical staff and allied health staff), you are required to ask these types of staff at any time when they are not performing a clinical task in the Ward (preferably towards the end of their shift)

When do I do if someone declines to answer?

- If a staff member declines to answer your query please record:
 - i) The profession of the staff member (i.e. nursing, medical etc.)
 - ii) The reason the staff member declined – only if offered!

How do I record the data collected?

- A simple template has been created to facilitate easy data collection.
- You must verbally ask the staff member about how many incidents they observed; you cannot provide the staff member with the template for them to complete.

What do I do with the data once it is collected?

- Drop off the completed template into the drop-box marked **Verbal Query**, located at the Nurses' station.

What action will be taken regarding the incident observed?

- Staff should follow the standard process of entering an incident into IIMS; however, you must not remind nor encourage staff to do this, as this process is voluntary.

Does providing short-cycle feedback produce organisational learning?

Instructions – Verbal Query Version 1 | 2 April 2012
Page 1 of 1

Appendix 11: Verbal Query Form

Project: Does providing short-cycle feedback produce organisational learning?

SWSLHD HREC: HREC/11/LPOOL/133

UTAS HREC: H0011969

Date: (DD/MM/YY)

Time: (HH:MM am / pm)

Incidents
Observed: (Number)

Brief
Description: (Type: e.g. Fall)

Profession: ☐ Medical ☐ Nursing ☐ Allied Health
☐ Support / Hotel ☐ Administration

Query Declined: ☐ Yes ☐ Reason (if offered):

Appendix 12: Short Cycle Feedback Form

Project: Does providing short-cycle feedback produce organisational learning?

SWSLHD HREC: HREC/11/LPOOL/133

UTAS HREC: H0011969

IIMS ID#:	.....	(Number)
Incident Date:	.....	(DD/MM/YY)
Incident Time:	.....	(HH:MM am / pm)
Principal Incident Type:	.....	(E.g. Fall; Med Error)
Notifier Designation:	<input type="checkbox"/> Medical <input type="checkbox"/> Support / Hotel	<input type="checkbox"/> Nursing <input type="checkbox"/> Administration
Notifier First Name:	.....	(First Name)
Notifier Last Name:	.....	(Last Name)
Incident Recorded Date:	.....	(DD/MM/YY)
Feedback Date:	.....	(DD/MM/YY)
Feedback Time:	.....	(HH:MM am / pm)
Feedback Transmission:	.....	(E.g. Face to Face)
Details of Feedback:	.....	(Text)
	
	
	
	
	
	

Appendix 13: Invitation to Participate in Focus Group

Memo



Health
South Western Sydney
Local Health District

TO	[REDACTED], Director, Operations
	[REDACTED], Director of Nursing and Midwifery Services
TO	[REDACTED], Director of Clinical Governance
	[REDACTED], Director of Medical Services
	[REDACTED], Director of Allied Health Services
	[REDACTED], Director of Human Resources
	[REDACTED], General Manager, Bankstown-Lidcombe Hospital
	[REDACTED], General Manager, Liverpool Hospital
	[REDACTED], Patient Safety Manager
	[REDACTED], A/Clinical Audit & Incident Manager
	[REDACTED], Manager, Clinical and Business Service
	[REDACTED], Director of Nursing and Midwifery, Fairfield Hospital
	[REDACTED], A/Director of Medical Services, Fairfield Hospital
CC	A/Professor Jeff Patrick, Coordinator of the Doctor of Health Service Management Paul Miles, Director of Corporate Services and Finance, Fairfield Hospital
FROM	[REDACTED], Chief Executive
TEL	9828 6938
SUBJECT	Focus Group: Incident Reporting

As you may be aware there are several Doctoral candidates within the South Western Sydney Local Health District (SWSLHD) that are completing a Doctorate of Business Administration with the University of Tasmania (UTAS).

Mr Paul Miles, Director of Corporate Services and Finance, Fairfield Hospital has undertaken a study in relation to incident reporting at Fairfield Hospital. I would like to invite senior staff across the Local Health District to a focus group session, in which the preliminary findings and recommendations from this study will be presented for consideration and feedback. A briefing note in relation to this study is attached to this memorandum.

The details of the focus group session are as follows:

Date: Wednesday 8 May 2013
Time: 2:00 – 3:00pm
Venue: LHD Boardroom, Liverpool Hospital (Eastern Campus)

Please be advised that the focus group session will be audio recorded. An audio / visual consent form must be completed by participants at the focus group session. The focus group session will be transcribed and de-identified and any comments will not be attributable to a specific individual. Furthermore, any discussions from the focus group will be aggregated prior to inclusion in the final published thesis.

Please confirm your attendance to Mr Miles by 5:00 pm on 26 April 2013 via email: paul.miles@sswahs.nsw.gov.au. Should you have any queries regarding the focus group please do not hesitate to contact Mr Miles via phone on 9616 8105 or 0439 662 683.

[REDACTED]
Chief Executive

Date: 7/4/13

Appendix 14: Focus Group Briefing Note

Focus Group Briefing | 08 May 2013

Focus Group Briefing:

Can short-cycle feedback produce organisational learning?

The aim of the study was to determine whether formative feedback, delivered within a short time period (72-hours) can produce a learning outcome. The formative feedback was provided by an experienced senior nurse to the reporting staff member of an incident report. In addition to this intervention, pre-intervention and post-intervention questionnaires were provided to all staff of two (2) wards within the study hospital. These questionnaires provided insight into incident reporting behaviours and allowed direct comparisons at an aggregated and individual level. Additionally, a verbal query process was conducted throughout the study to determine the number of incidents observed in comparison to incidents reported; to understand the prevalence of underreporting.

The purpose of the focus group is to discuss the results and preliminary recommendations that have been developed based on this research.


Results

- There was an improvement in staff satisfaction from the pre-intervention questionnaire to the post-intervention questionnaire in relation to the provision of feedback from incident reports.
- 77% of incidents, in which short-cycle formative feedback was provided, demonstrated a practical learning outcome; 44% of incidents complied with the short-cycle time period.
- The underreporting rate ranged from 12% to 25%; however, results were inconclusive due to limited staff participation.
- The average actual Severity Assessment Code (SAC) improved in the month-long phase in which the short-cycle formative feedback intervention was conducted.

Preliminary Recommendations – For Discussion

1. Conduct a larger replication study via either: multiple wards within the study hospital; within a larger hospital or across multiple hospitals.
2. Ensure the larger replication study has a larger representation of medical staff, either via specific promotional activities or enforced participation via senior management directive.
3. Recruit multiple senior nurses to perform the duties of the feedback specialist to ensure 24/7 coverage of the feedback specialist role, to support the provision of short-cycle feedback particularly during after-hours and weekends.
4. Expand the verbal query process to encompass a variety of modalities (i.e. self-initiated and electronic).
5. Consider offering the pre-intervention and post-intervention questionnaires electronically.

Appendix 15: Focus Group Participant Consent Forms

	
<p align="center">CONSENT FORM</p>	
<p>This form registers the agreement of visitors and staff to participate in recorded interviews.</p> <p>I, _____ of _____</p> <p>(address) _____,</p> <p>(phone) _____ give my permission for:</p> <p><u>Film footage / photographs in which I appear and/or</u> <u>Contents of an interview given by me (audio recorded & transcribed)</u></p> <p>To be used for: a Focus Group in relation to a Doctorate study, undertaken via the University of Tasmania (HREC: H0011969) and South West Sydney Local Health District (HREC: 11/LPOOL/133)</p> <p>_____</p> <p>_____</p> <p>Media involved (please specify type, e.g. television, radio, newspaper, etc): Research / Publication Journal _____</p> <p>_____</p> <p>_____</p> <p>Signed: _____ Date: _____</p> <p>Facility: _____</p> <p>Principal Researcher: Paul Miles (Director of Corporate Services & Finance, Fairfield Hospital; 0439 662 683)</p> <p>Signature: <u>Paul Miles</u> Date: <u>Wednesday, May 08, 2013</u></p> <p>_____</p> <p>_____</p> <p>_____</p>	

BINDING MARGIN - NO WRITING

STOCK NO.: INTERVAL JULY 1

CONSENT FORM